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THE Bulletin

OF THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

New Horizons in Staff Utilization

SERVICE ORGAN FOR AMERICAN SECONDARY SCHOOLS

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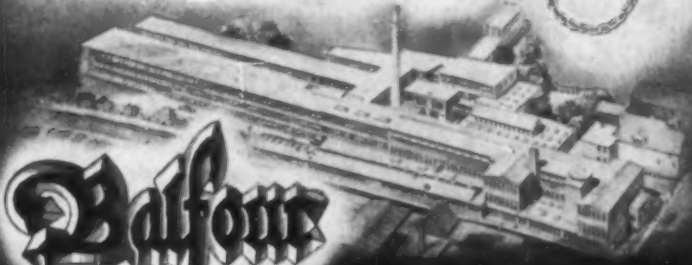

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Prepared for
The Commission on the Experimental Study
of the Utilization of the Staff
in the Secondary School

Appointed by
The National Association of Secondary-School Principals,
a Department of the National Education Association

Supported by
The Fund for the Advancement of Education
Established by The Ford Foundation

Commission on the Experimental Study of the Utilization of the Staff in the Secondary School

Appointed by the Executive Committee of the National Association of Secondary-School Principals

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THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

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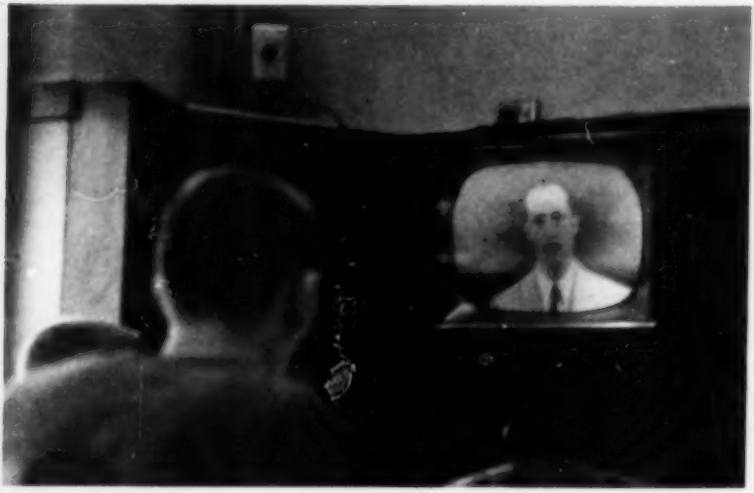
Part I

Why the Experimental Study Was Started

Students operate television cameras in typewriting class in Evanston Township High School, Evanston, Illinois. TV monitor, shown in picture below, enables teacher to observe students in the receiving-classroom. (See Chapter IV.)



Students in receiving-classroom being instructed by the typewriting teacher. TV camera in the upper left of picture has wide-angle lens to transmit general view of the classroom with 40 students to teacher in the originating-classroom. Receiving-classroom is supervised by an office clerk. (See Chapter IV.)

CHAPTER I

The Interest of Your Association in Staff Utilization

PAUL E. ELICKER

YOUR attention is directed to this special issue of THE BULLETIN so that you can learn about and know of the experimental studies on the most effective ways of using staff members in a number of secondary schools throughout the country during 1956-57.

The National Association of Secondary-School Principals has always been interested in improving the professional status of secondary schools and secondary education. It is stated in the Constitution that the purposes of the Association "shall advance the cause of secondary education by providing information and leadership in such matters as administration and supervision by encouraging research, by promoting high professional standards, by focusing attention on national education problems———." As a way of implementing these tenets of the Association, many studies have been carried on in the past supported by grants from Foundations or other philanthropic organizations. Such studies are the Consumer Education Study, the Study on Problems in American Life, the Study on Economic Education, the Post-School Follow-up of Student Career and Vocational Interests, and others. Special committees have been set up to work in certain important areas of secondary education such as the Committee on Curriculum Planning and Development, the Committee on Educational and Experience Standards for Principals of Secondary Schools, the School-College Relations Committee, the Committee on Junior High School Education, the Committee on the Relation of Secondary Education to National Security, and several others.

All of these studies and committee projects were largely concerned with subject or curriculum content and subject materials or with principles and policies in administration of the secondary school. Only indirectly were these studies, notable and significant as many of them were, dealing with Staff Utilization.

This Study on Staff Utilization differs from our other studies and projects in that it concerns the most effective and efficient use of the faculty and staff that every school has. It has often been claimed that a school is a good school if it has an efficient and well-qualified staff. A new building,

Paul E. Elicker is Executive Secretary of the National Association of Secondary-School Principals, a department of the National Education Association, Washington, D. C.

modern equipment and teaching aids, and necessary teaching tools have their place in a good educational program, but they in themselves never assure a high quality school program for youth. The staff and the way in which it functions is the primary requisite for a good school program.

This Study on Staff Utilization, experimental in its purpose, provides you with a descriptive account of a variety of studies in schools throughout the country. If you are interested in any of these studies and can adapt some of the findings to your own situation, we can fully justify the professional effort by the Commission on the Experimental Study of the Staff in the Secondary School, and its efficient director, Dr. J. Lloyd Trump, Professor of Education, University of Illinois. These experimental studies were possible through a special grant from the Educational Division of the Ford Foundation, formerly known as the Fund for the Advancement of Education.

It is evident to every school administrator that individual differences are just as apparent in the teaching staff as in students in the school. Every alert school principal has long attempted to utilize members of his staff so that the students and the community would obtain the maximum effort and services of his most highly competent members of the staff. Many times the administrator has been limited in the way in which he can give full and proper recognition to the special competencies of some staff members. If he has in effect a merit salary system for staff, he can readily recognize such personal abilities and competencies. It is sound administrative policy to determine salaries on the basis of quality productivity of the staff.

The National Association of Secondary-School Principals regards this study as one of the most significant and promising of its many studies over the years. It invites your professional and personal interest in it. The study continues throughout this year and more experimental studies are being made in other school communities.

CHAPTER II

A Look Ahead in Secondary Education

J. LLOYD TRUMP

SPECULATION about secondary schools of the future is both interesting and stimulating. Placing forecasts in print, however, is always hazardous because the writer never knows what unforeseen developments may alter the course of events in ways that make such proposals unrealistic. Another danger in describing what secondary schools of the future could be like lies in the assumption that readers might make that the secondary schools of the present are quite unsatisfactory. No one need apologize for the achievement of the present American secondary school. No where in the world, past or present, have so many been educated so well. It is equally true, however, that constant striving for further improvements has been the essence of these accomplishments. So with some trepidation, but with no apologies, an attempt is made in subsequent paragraphs to describe, in general terms, some characteristics that might be found in a secondary school of the future that would make it an institution quite different from those presently existing.

Two other comments should be made before the proposals are presented. In the first place, the presumption is not made that the ideas presented are unique and untried. As a matter of fact, nearly every idea included here is in existence in some secondary school or schools in the United States at the present time. However, no school exists that incorporates all of the ideas. Secondly, it is recognized there is a certain amount of generality which would need change in specific situations. The school which the writer has in mind is a nebulous one, smaller than the larger schools, and larger than the smaller ones, neither rural, urban, or suburban, with a student body and faculty also representing a hypothetical average.

The purpose in making these proposals is not to establish a final picture-in-the-head of the school of the future. The hope rather is that the readers of this chapter and issue of THE BULLETIN will be stimulated to design research studies and imaginative approaches to improve staff utilization in secondary schools. Also, the material aims to provide a frame of reference within which the experimental studies described in subsequent chapters of THE BULLETIN may be seen in perspective.

J. Lloyd Trump is Director of the National Association of Secondary-School Principals' Commission on the Experimental Study of the Utilization of the Staff in the Secondary School and Professor of Education, University of Illinois, 200 Gregory Hall, Urbana, Illinois.

Proposals are presented with respect to such phases of secondary education as staff, plant, learning resources, curriculum content, relations of students and teachers, organization and administration, staff welfare, evaluation, and community relations.

The Instructional Staff

The instructional staff will include a variety of types of persons with functions related to the competences of the different individuals. The following six categories of persons will be involved in the instructional program of the school:

1. Professional Teachers
2. Para-professional Assistants
3. Clerks
4. General Aides
5. Community Consultants
6. Staff Specialists

At the top of the scale will be *professional teachers.* These will be persons with a minimum of a Master's Degree and many with training considerably beyond that. They will plan methods and materials of instruction, with at times assistance from specialists in preparing visual and auditory materials; will teach concepts, ideas, and appreciations, for which they are particularly well qualified, to relatively large groups of students; will direct on the basis of their experience, using teacher-pupil planning when appropriate, the general learning activities of students; will serve as consultants to individuals and groups of students working on particular projects in and outside the school; will coach and sponsor so-called extraclass activities, no longer regarded as "extra," but rather as integral parts of the educational program; and will have general charge of evaluating student achievement. Some of the professional staff will be specialists in the use of such teaching aids as television, tape recordings, projectors, student self-appraisal devices, and the like, while others may be particularly effective as leaders of group discussions and workers with smaller groups of students.

The professional staff will be aided by a group of what may be called *para-professional assistants.* These para-professional persons will be carefully selected from among persons in the community, most of whom will be college graduates and all of whom will be selected to do rather specific aspects of the teaching job. The para-professionals will work at activities somewhat higher on the professional scale than those assigned to clerks but lower than that of the professional staff. The para-professionals will provide such services as the following: reading English themes, science reports, social studies essays, mathematics exercises, and other types of compositions; confer with individual students about their writing and provide teachers with reports regarding the quality of student efforts; serve as laboratory assistants when science laboratories are open to students for individual and small group research outside of regular

class hours and in such activities as behind-the-wheel instruction in driver education; supervise certain out-of-school projects in agriculture, homemaking, and other vocational fields; supervise the practice of selected groups in music; evaluate and criticize some of the student work in art, mechanical drawing, and other phases of creative and practical arts; give instruction at times to large groups of students when they are particularly competent to handle a given topic; assist in the supervision of students on field trips; and check on the progress of students working on projects in the community or in local industrial establishments. These para-professional workers are likely to be part-time workers who will be employed by the school district from ten to twenty hours per week. Although most of them will be housewives, there will doubtless also be men whose positions do not require them to work more than thirty to forty hours per week at other jobs. It is conceivable that, for each professional staff member employed in the school, there would be at least forty hours per week of para-professional services available.

Routine matters which are a part of the teaching job would be done by *clerks*, the third category of the instructional staff. Such persons ordinarily will be high-school graduates with reasonable competence in typewriting and ability to check materials and prepare reports, grade objective tests, keep records, copy materials, duplicate materials, check and distribute supplies, and perform many other duties of a like nature. It would seem that each professional staff member should have available ten to fifteen hours of clerical services per week.

A fourth type of staff person might be called a *general aide*. These individuals will be adults with a minimum of high-school education and preferably some work beyond high school. Their training would not need to include typing, nor would they have to be facile in such other activities as clerks normally are required to do. The work of these individuals will include controlling and supervising students in such large areas as the school grounds, cafeteria, corridors, study halls, auditoriums and large meeting rooms, and at extraclass activity performances. Such persons would exercise control on as high a professional level as possible; they would work with students in planning and developing student self-control. Doubtless many of these persons might serve as sponsors of some extraclass activities when they had interests and competence to do so. They will be trained by school authorities for the specific tasks assigned to them. There might be one such general worker for every six or eight professional staff members.

A fifth type of staff member will be *community consultants*. These will be competent persons in the community who are employed by the school for an occasional specific assignment. It is assumed in most instances that such persons might volunteer their services. Through the use of kinescopes, electronic recordings, pictures, films, and the like, their contributions could be kept for future use. Such individuals might not

have to be paid. Highly competent in their respective fields, they are employed to supplement the services of the professional staff.

The sixth category of instructional personnel includes the *staff specialists*, many of whom are professional workers. The school of the future will continue to provide custodial, guidance, research, health, aid to exceptional children, and other specialized staff services much as the present. Doubtless some of these activities will be expanded and others added as the program develops.

The School Plant

Three concepts relative to physical facilities require special consideration in thinking about the secondary school of the future. *First*, the school plant should no longer be thought of as merely a building and adjoining grounds. *Second, space* arrangements need to be considered in relation to purposes and content of instruction. *Third*, provision should be made for effective utilization of electronic and mechanical aids to learning.

The school plant is as broad in scope and area as the learning experiences which are planned for students. Learning experiences of students will take place in libraries, shops, governmental agencies, office and industrial establishments, and many other places in the local community, and, on occasion, in communities removed at some distance from the central school building. While this broad concept of the school plant does not permit the same type of control and supervision over students that can take place when all learning occurs within a single school building, school officials still have the responsibility of exercising ordinary care in the legal sense in supervising students making use of this broadly conceived type of school plant.

Since students will be taught in various sized groups depending upon the purposes and content of instruction, the school plant of the future will need to provide appropriately planned rooms where groups of 10, 20, 50, 100, or possibly 500 students may be assembled for instructional purposes. There will also be changes in kinds of rooms required. The school of the future will not include study halls as now conceived; instead there will be resource rooms where students may listen to tapes, view films, work on self-appraisal machines, and participate in other self-directed learning activities. Because of the limited research data available at this time, it is difficult to make an intelligent guess regarding the numbers of different sized rooms needed in a secondary school for a given number of students. It would appear that in academic classes large group instruction might take place on an average one to two periods per week with an additional one to two periods being spent in relatively small group discussions with the balance of the time spent by students working in laboratories, libraries, and resource centers in the building or in locations away from the school campus. Such a building might be proportionately smaller in square feet area per student than present ones.

Provisions will be made for running whatever kind of cable may be needed in close-circuit television, central electronic tape, and other communication systems. Since instructional films will be shown from a central studio rather than by moving projectors and screens from one room to another, it will not be necessary to darken rooms and provide screens as in the past. Since the future is almost certain to bring electronic and mechanical aids not now known, the building of the future should include open pipe connections so that cable may be threaded through as needed.

Learning Resources

The secondary school must make available to its students all of the avenues to knowledge, appreciation, and understanding. No longer do textbooks and oral explanations of teachers suffice as a media of communication between the student and what he wants to learn.

Television, radio, disc recordings, electronic tape recordings, films and slides, mock-ups, books, magazines, pamphlets, and other materials must be readily available to students. The time of students will not be so rigidly scheduled that it is impossible for them to spend time as individuals or in small groups in viewing, listening, and reading. Professional teachers will guide students to the learning resources and serve as consultants when questions arise in the minds of students after they have viewed, listened, and read.

The use of material and personal resources of the community has been mentioned previously. Learning resources will not be located entirely within the walls of the central school.

Curriculum Content

Many efforts will be made in the secondary school of the future to identify those basic elements of knowledge, appreciation, and understanding that are essential for all students. These basic elements will be drawn from further analyses of the needs of youth, the requirements of a democratically oriented society, and knowledge of fundamental subject content required as a basis for further creative and specialized activities on the part of students.

Relationships among the basic elements referred to in the preceding paragraph will be better understood in the future so that needless duplication of materials may be reduced and subject matter content may be organized on more logical and psychological bases. These basic elements actually should comprise not more than one-fifth to one-third of the curriculum content so that there is much time and opportunity for study of content that is particularly interesting and appropriate for students with wide ranges of individual differences in interests, abilities, and goals.

This kind of reorganization of curriculum content has significance in improved staff utilization. Time of teachers may be saved as repetition

is reduced. Basic elements may be taught in part in large group situations where student learning may be more efficient because presentations are more skillfully planned and given.

Some phases of curriculum content will be covered in student groups of ten to fifteen while other materials are learned by students working independently as individuals or small groups.

Methods of Teaching and Conditions for Learning

Relationships among purposes of instruction, content to be learned, creative activities growing out of learned content, methods of teaching, and conditions for learning will be better understood in the secondary school of the future. No longer will it be assumed that all learning should take place in classes of twenty-five, with a teacher in charge who is responsible for all phases of instruction. Motivating students, creating perplexities that cause dissatisfaction with present understandings and make students ready to learn, introducing students to various avenues of learning, and giving guidance in directing the learning efforts of students will be done in larger group instruction by teachers who have the time to prepare for instruction and who are particularly competent to do so. Various types of presentation and discussion techniques will be used by teachers in making this large group instruction effective. Such instruction is not to be confused with the lecture system long prevalent in colleges and universities. Large groups also will be assembled when students have learning experiences which should be shared with larger numbers.

A number of activities will be carried on in classes smaller than the traditional size of twenty-five. Groups of ten to fifteen will be used when students are setting goals for achievement, making preliminary reports based on learning experiences, engaging in discussions to clarify opinions and reach consensus, doing creative writing, and participating in other activities where small group situations are appropriate.

Methods of instruction will include much emphasis on individual and small group activity where the role of the teacher is largely that of a consultant. As implied earlier in the chapter, such learning activities will take place in a variety of locations and will involve the use of many media of communication.

Much more emphasis than now will be given to the development of procedures and competence on the part of individual students for self-appraisal of progress in goal realization. Students will check their own gains instead of preparing for the battle of wits with the faculty that teacher-made tests typically produce. Obviously, there will need to be some independent evaluation by the faculty, but this will occupy relatively a less important position than now. This does not mean that there will be a lowering of standards; as a matter of fact, there should be higher standards of achievement as students become more critical of their own knowledge, appreciation, and understanding.

Associated with student self-appraisal and activity will be the provisions for more adequate time for student activity. The school of the future will see less structuring of student time in standard forty- or fifty-minute periods. A student who is genuinely interested in working on a project does not wish to drop the activity when the bell rings at the end of a short period forcing him to go to something quite unrelated which often seems less interesting and important.

Relations of Students and Teachers

The foregoing sections of this chapter have already implied different relationships than possible in the school of the past where students and teachers were placed in standard sized classes. With teachers quite completely scheduled during most of the periods of the day, and students likewise fully occupied, there actually were too few opportunities in the past for teachers and students to meet and work together on individual and small group bases. Also the point of view was accepted that secondary-school students could seldom be left to their own devices insofar as learning was concerned; all of their day was highly organized in standard group situations.

For some parts of the school day in the secondary school of the future, relations between teachers and students will be on a relatively impersonal basis. This will be true when teachers are instructing larger groups of students by means of various projective devices in order to develop basic concepts and desire and ability to work independently. However, because part of the instruction is done with large groups, and time is saved for both students and teachers, it will be possible in the secondary school of the future for teachers and students to work much more in individual and small group relationships than was possible when everything had to be done in groups of twenty-five. The student who comes to the teacher with a specific problem related to some project on which he is working and in which he is interested and who obtains help from the teacher in solving some problem develops a type of rapport with the teacher that is closer than anything that takes place when he sees the teacher as a member of a group of twenty-five to thirty students.

Efforts will be made in the future secondary school to develop independence on the part of students in learning activities. Recognized will be the fact that students are growing, maturing individuals who will not always have the teacher to force them to study, tell them where to find answers, explain every minute detail, and finally tell them whether they have learned something or not. Certainly one of the fundamental characteristics of an educated person is his ability to go ahead in the solution of problems and the learning of information with a minimum of direction.

The goal of the secondary school will be to place the teacher more in the role of a consultant and less in the role of task-master. The teacher

will spend less time and energy in telling students what they must do and more in raising issues and pointing the direction to possible materials and solutions to problems.

Organization and Administration

Many implications for administrative and supervisory changes in the secondary school of the future have already been implied. Staff members will be selected and assigned on the basis of specific rather than general functions. Some of the professional staff need to be specialists in large group instruction using a variety of projective techniques; at least, part of their time will be spent in such activities so they will need to be prepared and competent to do them. Others of the professional staff will be employed more in situations involving smaller groups of students and will need to be particularly competent in stimulating and involving students in those situations. Staff specialists will be selected because of competence in such fields as evaluation, guidance, and services to exceptional children. Para-professional assistants, clerks, general aides, and community consultants will be selected because of preparation and competence to do specific tasks as indicated in the first section of the chapter.

Many basic assumptions underlying present standards of teaching loads will be changed. The professional person engaged in large group instruction will need much more time than now for the preparation and development of materials and planning the instructional programs. It would seem that such persons should not be in the physical presence of groups of students more than twelve to fifteen hours per week. Teaching loads will be equalized more on the basis of total number of hours per week than on mathematical formulas.

The schedule of classes will be planned cooperatively by teachers and students so that it will be possible to assemble different sized groups of students whenever the need arises. Instead of the rigid schedule planned one semester or more in advance, there will be periodic re-groupings of students to serve better the purposes and methods of instruction as devised from time to time. Periods will not be of uniform length; they will include thirty- to forty-minute sessions when large group instruction is taking place and periods of two to three hours when students are working on individual and small group projects. Incidentally, the secondary school of the future will not be disturbed with the constant ringing of bells as has been the case in the past. The time which students spend under the direction of the teacher will be varied in terms of need. No longer will classes arbitrarily be scheduled five days per week for one semester in order to receive credit.

Better utilization of the school plant and teacher services will lead to operation of schools during longer periods each day, for more days in the week, and for more weeks during the year. This does not mean that all teachers will work six days per week on an eleven- or twelve-month

basis, but it does mean that those teachers who are interested, able, and wish to work longer periods will be able to do so and receive higher salaries. Also students will find it possible to use school facilities and services for longer periods of time.

Guidance services and attention to students as individuals will be increased as the secondary school places less emphasis upon mass classroom recitations where the teacher-dominated situation may provide relatively little attention to individual needs. Emphasis will be given to developing students who are capable of solving their own problems.

Salary policies will be based more on what different staff members do, and how well they function, than solely on the basis of years of training and experience. It will not be necessary for the teacher who wishes to earn a higher salary, and has the competence to do so, to become a coach or school administrator. The professional teacher who works on a year-around basis will be able to earn a salary considerably in excess of $10,000 per year.

Although the administrator will use appropriate methods in obtaining additional funds for school support, efforts will also be made to spend school monies in ways that will produce improvised staff utilization and better learning results for students. Money that is saved through part-time large group instruction, and the use of lower paid assistants, will be used for higher salaries for professional workers and the purchase of electronic and mechanical aids to instruction.

Staff Welfare

One of the fundamental characteristics of the secondary school of the future is that differences among teachers with respect to interest and competence to perform various functions relating to teaching will be recognized. Assignments of the staff will be made cooperatively with such differences in mind. Some teachers are happier and more competent when they are teaching larger groups; others are more effective with smaller groups. Some persons have the stamina to work effectively more hours per week and per year than do others. Flexibility should be maintained so that changes in assignments can be readily made.

The welfare of teachers requires attention to staff utilization. No longer will there be an assumption that all teachers shall do all things for the same number of students. Teaching must become easier rather than more difficult, and professionally more rewarding.

Evaluation

What the school is accomplishing must be measured in terms of the purposes for which it has been established. Tests of achievement in subject matter which have in the past served as the primary form of evaluation will, in the secondary school of the future, constitute only one measure of success. A variety of devices will be used to show not only whether students are learning the basic elements required for an

educated person in this society, but also whether they are developing creativity and independence in learning ability, whether they are continuously maturing as well-adjusted, healthy individuals, who are good citizens and acceptable persons with whom to live and work, and whether they have developed the kind of moral and spiritual values which are acceptable in this culture. Behavioral changes and conditions for learning will be analyzed in relation to carefully defined and widely understood purposes of secondary education.

Much more will be known about students and teachers in the secondary school of the future. Not only will more be known about these persons, but also programs continuously aimed at producing ameliorative changes in both groups will be developed.

Community Relations

The position of the secondary school of the future in the community in which it exists will be much more soundly based than has been true in the past. The school of the past depended upon the PTA, citizen's advisory councils, newspapers, radio, and television publicity, and interpretations by students and teachers as means of producing understanding of its program on the part of the community. These methods of communication will be augmented in the secondary school of the future by the fact that the program of the school takes place also in the community rather than largely in an isolated school building. Larger numbers of adults will be used on part-time bases as instructors and teaching assistants. Community resources will be regularly utilized by students. Moreover, education will be a continuous process as graduation or commencement becomes less important because of adult education programs and closer integration between the secondary school and the college. Students in the upper years of the secondary school will gradually attend formal classes less and work more in the community until the major part of their time is spent as community workers. They return to the school only as students in adult education classes.

This integration of school and community will bring a kind of community relations not conceived in the past. It will be difficult to tell where the school ends and the community begins because the two are interwoven so completely. When the community thus plays an integral part in the educational program, there will be better understanding of what teachers do, what is expected of students, and what kind of money it takes to provide an educational program that will produce the outcomes which the community expects.

Pre-service and In-service Education

The secondary school of the future will take a more active part in the pre-service selection and education of its staff as well as in the continuing growth of the staff in service. At least four needs for improvement in teacher education will receive more consideration than in the past: train-

ing shared with higher institutions of persons for specific staff responsibilities, closer integration of content areas and professional education courses in higher institutions, closer integration between professional education courses and practices in secondary schools, and shared responsibilities among higher institutions and secondary schools for in-service training programs.

Secondary schools will have better organized and implemented programs for interesting competent students in entering college to train for areas of responsibility, including teaching, that may be appropriate. Those students who select teaching as a career will spend an average of from 5-15 hours per week during all of the college training period at a variety of tasks in secondary schools. During vacation periods they will work at tasks designed to provide experiences that will also be helpful. All during the pre-service education period, secondary-school teachers and supervisors will play active parts in working with teacher-education students in cooperation with college instructors.

Secondary-school teachers and supervisors will also work with college instructors in developing and implementing programs of selection and training of para-professional workers, general aides, clerks, professional specialists, and community consultants. The close working relationships between professional staffs in secondary schools and higher institutions will provide stimulation for both groups in the continuous re-examination of programs at both levels. In-service growth of both groups will be a concomitant result.

Next Steps

Whether or not this secondary school of the future as described becomes a reality depends upon changes which may come as a result of valid and convincing research conducted in numerous junior and senior high schools. The NASSP Commission described in Chapter III of this BULLETIN was created to encourage such experimentation. Subsequent chapters present illustrations of approaches to better use of the teaching staff. Later chapters present reactions of a number of representative individuals to such research. THE BULLETIN concludes with references to some studies not under the supervision of the NASSP Commission and some suggestions concerning studies that might be made in additional schools.

Correspondence relative to experimental studies of improved staff utilization may be addressed to the author, 200 Gregory Hall, Urbana, Illinois. The active interest and cooperation of readers is solicited.

CHAPTER III

Why the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School Was Created

CHARLES W. SANFORD

THE appointment of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School was approved on January 21, 1956, by the Executive Committee of the National Association of Secondary-School Principles to implement *"A Proposal Designed To Demonstrate How Improved Teacher-Utilization Can Help To Solve the Problem of Teacher Shortage in the High Schools of the United States."* This *Proposal* had been recommended by the Curriculum Planing and Development Committee of the Association.

The Curriculum Planning and Development Committee had, for a number of years, studied problems of teacher education as one of its six major projects. The Sub-committe on Teacher Education of the Curriculum Plannning and Development Committee pointed to the seriousness of the teacher shortage problem in an article on "Teacher Preparation, Certification, and Recruitment." in the November 1955 issue of THE BULLETIN of the National Association of Secondary-School Principals.

The Executive Committee of the National Association of Secondary-School Principals in January 1955 authorized its Curriculum Planning and Development Committee to act for the Association in seeking ways and means of meeting the teacher shortage at the high-school level. Subsequently, representatives of the Curriculum Planning and Development Committee[1] met on several occasions with representatives of the Fund for the Advancement of Education to explore the problem and to determine whether or not the Fund might be interested in providing financial suport for studies concerned with the problem. From the outset, representatives of the Fund exhibited much interest in the problem.

In May 1955, the Executive Committee of the National Association of Secondary-School Principals authorized an allocation of funds to the Curriculum Planning and Development Committee to identify high

[1]Representatives of the Committee were: Dr. Will French, Professor of Education, Teachers College, Columbia University, now *emeritus*; Dr. Lloyd S. Michael, Superintendent-Principal, Evanston Township High School, Evanston, Illinois; and Dr. Charles W. Sanford, then Associate Dean, College of Education, University of Illinois.

Charles W. Sanford is Dean of Admissions and Records at the University of Illinois, Urbana, Illinois.

schools which would be interested in conducting projects designed to relieve the teacher shortage. The Curriculum Planning and Development Committee found a high level of interest in numerous schools in various parts of the United States.

Officials from a number of theses schools, representatives of the Fund, and representatives of the Curriculum Planning and Development Committee met in December 1955, to consider further the nature of the projects in which these schools had indicated an interest. The persons in attendance agreed that the projects proposed offered genuine promise of making significant contributions to the teacher shortage problem. Subsequently, the Curriculum Planning and Development Committee recommended the *Proposal* cited above to the Executive Committee.

The *Proposal* recommended the approval of a number of projects described elsewhere in this *publication*. It stressed throughout the improvement of the quality of instruction through the improved use of staff resources while meeting the teacher shortage. It also pointed out that while the high schools and teacher education institutions should utilize improved methods of recruiting able young men and women for the teaching profession, it is the opinion of the Curriculum Planning and Development Committee that the probability of meeting the high-school teacher shortage merely by efforts to induce an ever increasing number of people to enter the profession is small considering that other professions are also demanding the services of an ever increasing number of our most able young people.

The *Proposal* underscored the need for careful evaluation of the effectiveness of the instruction offered through new approaches which included focus on the utilizaton of teaching assistants working under the supervision of master teachers, reorganization of administrative patterns, utilization of modern instructional equipment, and utilization of experienced and capable teachers as a factor in interesting increased numbers of able young people in teaching.

The Executive Committee of the National Association of Secondary-School Principals in May 1956 named the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School to provide general supervision to the project. Present membership of the Commission is shown on the back of the title page of this *publication*. Two changes in membership have occured. Dr. George L. Cleland, Secondary-School Consultant, State Department of Education, Topeka, Kansas, then President of the Association, was an original member as was Dr. Leo Barry, Principal of the Newton High School, Newtonville, Massachusetts, since deceased. Dr. Lloyd S. Michael, Superintendent-Principal, Evanston Township High School, Evanston, Illinois, replaced the author as Chairman of the Commission in September 1957. From the beginning of its activities, the Commission has had regularly a high

quality of consultative and cooperative services from Dr. Lester W. Nelson, Executive Associate of the Fund for the Advancement of Education, and formerly Principal of the Scarsdale, New York, High School.

The Commission has held a number of meetings in order to initiate policies consonant with the purposes of the project, to adopt criteria for the selection of experimental projects, to recommend projects for support by the Fund for the Advancement of Education, to prepare and publish periodic reports including the brochure, *An Exciting Profession: New Horizons for Secondary-School Teachers,* to develop standards of evaluation for the project in general and also for individual studies, and to perform other tasks in connection with the program. The Commission has seen as a responsibility not only to conduct studies under its supervision, but also to disseminate information about the need for experiments and demonstrations and to publicize descriptions of other studies under way.

The Commission has not deliberately sponsored any particular approaches to the solution of the problems for which it was created. In announcements and presentations at the 1956 and 1957 Annual Conventions of the National Association of Secondary-School Principals, the invitation was given to all schools to submit proposals for study. All requests from local schools to participate in the program have been evaluated on the basis of potential contributions to improvement in the quality of instruction while at the same time making better use of the professional competences of teachers and contributing to solving problems which have arisen in part because of the shortage of highly trained, qualified teachers.

CHAPTER IV

Closed-Circuit Television Is Used at Evanston Township High School

William G. Carpenter
Jean E. Fair
James E. Heald
Wanda B. Mitchell

In a few short years television has become a more important means of communication than radio or motion pictures. Although television has been used primarily for one-way communication, it is capable of allowing large groups of people to see and hear what is going on among them. At the same time, the television screen can foster some illusion of intimacy. Television can transmit what is present and immediate, and yet reproduce whatever has been recorded in the past by film or kinescope, by picture or even writing. The screen can make visible what is otherwise difficult to see. The camera can focus attention and emphasis. The potentialities of such a communication instrument for use in the nation's schools surely deserve to be more fully explored. Evanston Township High School has been one of many schools interested in the place of the new medium in an educational program.

The present teacher shortage is already well-known, and the problems which result from it are serious. Some schools, such as Evanston Township High School, in more favorable positions than many, have unusual responsibilities in the face of these problems. They can contribute to the seriousness of problems by using higher salaries and attractive working conditions to recruit teachers from less favored schools. They can also help to solve these problems by developing new methods of utilizing capable teachers and demonstrating promising practices for improving instruction.

Evanston Township High School has had a tradition of pioneering educational frontiers. Consequently, Dr. Lloyd S. Michael, superintendent-principal, and the staff have looked to the possibilities in the use of closed-circuit television as a means both of improving the instructional program and of using capable teachers more effectively. It is the school's hope that the findings from its experiences may be useful to other secondary schools.

Jean E. Fair is Director of Research at Evanston Township High School, Evanston, Illinois, and William G. Carpenter, James E. Heald, and Wanda B. Mitchell are Teachers at the same high school.

Launching the Project

Major Decisions

The school made its decision to explore the potentialities of closed-circuit television almost a year before its actual use in classrooms. Consideration of the possibility of using television had begun even earlier. The question of whether to use television at all depended upon identifying what the school wanted to find out about its uses. A first major problem was that of clarifying the questions which the school hoped to answer. Discussion of these questions was part and parcel both of deciding to undertake experimentation and of considering all other basic problems. A temporary committee of the administration and interested teachers agreed that these were the questions to which the school might contribute some answers.

1. To what degree can closed-circuit television assist in meeting the teacher shortage at the secondary-school level?
2. Can closed-circuit television effect an improvement in instruction and better utilization of the well-qualified teacher?
3. Which outcomes of instruction in various subjects in the secondary school can be achieved more effectively, as effectively, less effectively by the use of closed-circuit television?
4. In what specific ways can closed-circuit television assist the classroom teacher to keep the quality of instruction high despite increased enrollments?

Back of these questions lay the assumption that the school was interested only in such uses of television as might improve instruction or utilize teacher time more effectively. The school was not interested in uses of television which lowered the quality of instruction in the interest of increasing the number of students to be instructed. The staff committee did not foresee a conflict between maintaining or improving the quality of instruction and using teacher time better, nor did any such conflict develop.

At least three other basic questions had to be answered along with the question of whether to undertake a television project: (1) Who should do the teaching in the school? (2) In which subject areas could and should television be used? (3) To what extent should the conventional structure of the school's courses be altered?

It was agreed at the outset that teaching by television should be voluntary. A try-out of the new medium called for the kind of teaching which came from genuine interest, not imposed participation. This method of teacher selection worked well. The two teachers actually chosen from several volunteers—and primarily on the basis of subject area—brought to the project not only their very real abilities in teaching but creativity and enthusiasm as well.

There was and is much to be said for the use of a team of teachers in a course using closed-circuit television. However, the school was more interested in seeing the extent to which persons not fully qualified as professional teachers could be used effectively to free qualified teachers

for other work. In two courses there was opportunity to try out the use of two kinds of non-professional teacher aides. The development of productive methods by which teachers could work together introduced an additional set of problems, ranging from such procedural matters as meeting time to the more difficult, such as agreeing upon objectives. It was thought that such problems made the first year of experimentation more complicated than necessary. Consequently, the staff committee agreed that a single teacher should have professional responsibility for one course, with the help of a clerical aide in one and of cadet teachers from a nearby university in another.

The question of subject areas was more difficult. Studies of the literature and interviews with those who had tried out television elsewhere had to offer some hope of success in whatever areas were chosen. The school wanted to avoid experimentation at the expense of student progress. At the same time, the school wanted to make some exploration in new areas rather than merely repeat what had already been tried. It was agreed that the areas ought to allow some contrast in the kinds of learning outcomes expected. Moreover, it was sensible to try the use of television as a means of using teacher time more effectively only in courses ordinarily enrolling a large number of students. In the end, the school settled upon typing as one area where the frequent use of demonstration-practice promised success and where learning outcomes were narrow in range and quite readily defined and observed. A second area was in English-Speech courses; some features of television, such as its ability to allow criticism of an on-going speaking activity without actual interruption, were encouraging; the problem of developing the kind of interpersonal relations needed was a stimulating challenge; and learning outcomes were complex and often described as intangible. There were interested teachers and sufficiently large numbers of students in both of these subject areas. The selection of actual courses within these subject areas was made later than the decision to undertake an experiment with television and to make the selection primarily on the basis of course enrollments. Beginning typing, taught by William Carpenter for seniors, and English-Speech, taught by Miss Wanda Mitchell as a sophomore English elective, offered an interesting contrast between two kinds of courses. Only two courses were chosen in order to avoid undertaking too much the first year.

The staff committee also agreed that the first experimentation with the use of television should be carried on within the basic course structure as it already existed and without major revision of the objectives of the televised courses. The conventional subject matter courses structure of one class session each day of the week may not be the one which best capitalizes upon the potentialities of television. Perhaps responsibilities for developing particular objectives in the educational program should be re-allocated to different subject matter courses or new courses organized on other bases than subject fields. However, at the first, the

staff of the school's project lacked the experience for outlining any new and basic course structure more useful for television. Staff members had questions about the kinds of learning activities for which television was proper. It was hard to weigh whether or where non-professional aides could be used appropriately. It was difficult to fit an entirely new program into the over-all program of the school. Moreover, the staff committee was unsure of the reactions of the staff as a whole and the community, even though the committee had no reason to anticipate opposition to the use of television in a school community where new ventures in education have been welcomed. In general, the school has been satisfied with working out gradual changes in its educational program.

Still another early decision, and one made quickly and easily, was that a tryout of closed-circuit television in the two courses, beginning typing and English-Speech, ought to be a project of major, not secondary, importance in the school. Consequently, from the beginning, the school hoped to draw upon available expert and outside help and to make a systematic evaluation of its work. The school was pleased that its proposed project had the approval and help of the *Commission on the Experimental Study of the Utilization of the Staff in the Secondary School* as one of the experimental studies in schools where careful plans had been worked out for evaluating new practices in staff utilization.

Getting Under Way

While these decisions were basic, they were by no means the only ones to be made in the year before the actual use of telvision.

A full-time television engineer was added to the staff. Teachers lacked the time and professional know-how for dealing with this new, complex equipment. The services of the engineer proved to be invaluable in selecting, installing, maintaining, and operating, as well as advising on ways of making the most of the equipment. Two students were also employed as part-time helpers; both the school and the boys profited from their work. The operational system was well enough planned in advance so that not one class session was lost in either course because of failure in the television equipment.

Television was always regarded as a means of instruction, not the heart of it. The television equipment and its physical lay-out had to be fitted into the requirements of good learning situations. No one wanted to give up what was thought vital in the educational process—teachers' opportunities to know students. Teachers wanted to remain teachers; they did not wish to become performers. Students had to be able to communicate with their teachers and with other students, not merely to ask for information but, for situations like those in English-Speech, even to participate in group discussion and planning. It was agreed, therefore, that teachers were to carry on instruction in a classroom of students and not from a studio. A talk-back system, which could be used and heard by

all students and the teacher, was needed. The typing teacher wanted a monitor camera on the viewing room to keep in touch with students' progress there. Because the English-Speech teacher thought the opportunity to watch themselves speak important for both teacher and students, she wanted the monitor camera on the central televised situation. The equipment was planned accordingly.

There were many other technical decisions to be made about the equipment. However, since they have been reported elsewhere, they have not been repeated here.[1]

Teachers had to plan their televised courses and prepare themselves to teach them. Even though they made no basic revisions in the objectives of their courses, it was necessary to think through their plans for setting up learning activities, gathering suitable materials and organizing units in which television could be used. The typing teacher considered the competence of a clerical aide sufficient for the one classroom in which he was not to be present. The English-Speech teacher wanted the pre-professional training of cadet teachers. Responsibilities had to be allocated between teachers and the aides. Both of the teachers checked by actual telecast the effects created by various lenses, camera positions, lights, different types and positions of microphones, and the like on a variety of materials and activities.

Both of the teachers set themselves to learning about the new medium well in advance of their televised teaching. It seems hardly necessary to say that both of these teachers studied carefully the professional literature in their specific teaching fields and in the general area of instructional television. The school library provided them with an extensive bibliography and purchased many books and periodicals for their preparatory study. Fellow staff members not directly involved in the experiment generously provided their services as an efficient clipping bureau for invaluable newspaper coverage.

The typing teacher began his training in summer school classes by teaching on camera from the rear of the classroom, observing the effect of his television instruction on the class in front of him. Kinescopes of televised typing classes at Michigan State University were studied. He visited the closed-circuit installation at Pennsylvania State University, observed classes taught by television, and conferred with the directors of the program there.

The English-Speech teacher attended the Northwestern-National Broadcasting Company Television Institute for six weeks, taking courses in television production and directing. For ten months she visited colleges and universities teaching courses by television, public school systems using educational television stations, and high schools teaching courses by closed-circuit television. These visits included observation of the courses as telecast; interviews with teachers presenting the courses,

[1]W. Irvin Blundell, "Starting Out with Closed Circuit TV." *The Nation's Schools:* 60; No. 2 (August 1957); pp. 55-60.

students being instructed, and administrators responsible for the planning and conducting of the courses; and interviews with technical personnel regarding equipment, production problems, and techniques peculiar to classroom television.

Although a multitude of problems were taken care of in advance of actual television teaching, there were still some unforeseen, and some even entertaining. The typing teacher had to buy a new light-colored jacket in the fall, for example, when he found his dark ones merged his camera image with the blackboards behind him. Still, the advance planning allowed instruction to proceed smoothly from the start and helped to relieve teachers' tensions about their new venture.

Another set of problems centered around *selecting and training cameramen.* The staff of the television project hoped to find a sufficient number of students mature enough to handle expensive equipment and able enough scholastically to afford to give their time to the project. At the same time, the staff thought experiences as cameramen might be worth-while for students. The alternatives, of course, were either the use of additional, non-professional personnel, expensive and difficult to arrange, or the use of staff members, hardly the best allocation of teacher time. Interested and capable students did volunteer. The cameramen, when chosen, were sophomores and juniors who were to serve during their junior and senior years in high school. Sixteen students were selected, thirteen boys and three girls.

Methods of training these students had to be worked out. A summer school workshop was set up to meet two hours a day, six days a week for three weeks. Instruction was conducted by the television engineer and the English-Speech teacher.

Emphasis might have been placed on technical background in electronics or related areas in selecting and training cameramen. Instead, the emphasis was placed on using the equipment for teaching. The supervising engineer did advise students on the technical aspects of operation. Students with a background in electronics had an advantage, to be sure, but, under the supervision of the television engineer, students with average technical skill could acquire sufficient dexterity to operate cameras and switches satisfactorily. The most necessary characteristic of successful cameramen or switchers was the ability to look at the operation as a teaching-learning situation and to direct their actions and those to whom they gave instructions in such a way that the best possible learning environment was established. Again and again switchers were instructed to select pictures with these criteria in mind: What should students be seeing at this time? Does this picture help the learner? Does this picture focus attention on the proper center of interest? What picture should logically follow this one to assist the learner? Does the learner need a close-up here or a long, over-all view?

Consequently, the workshop instruction was entirely "laboratory" with projects for each student in checking camera controls; each lens and

its capabilities; the effects of different camera positions; the composition of different types of pictures; the effects of light in various amounts and in varying positions; the effects of texture and finish; the effects of location and shape of articles; the most effective demonstration techniques; the value and purpose of cover shots, panning, waist shots, and close-ups; and the most effective use of special lenses, such as the zoomar. The relation of television techniques to effective teaching-learning was demonstrated by having each student teach a ten-minute lesson illustrating each of these methods: lecture, lecture-demonstration, question-answer, discussion, panel, drill, and a combination of any two of these. During these "teaching demonstrations," other students in the workshop had to solve the problem of obtaining the best camera shots to "get the idea across" in the most effective way to the learner in the viewing room. The ability to think through the lesson from the standpoint of the teacher's purpose and aim was the most important goal of the instruction. The use of student cameramen proved to be satisfactory, as did the methods of selecting and training. Students gave capable and reliable service and, at the same time, developed new skills and responsible self-direction.

Television had promise in many areas of the total school program. The equipment was expensive enough to warrant making as much good use of it as possible, even in a first year. It was agreed that although efforts had to be concentrated on television in the two courses; still, once these two courses were under way, the new medium should be tried out for other purposes. Consequently, the physical facilities of television had to be made available at several points in the building other than the classrooms using it daily.

Attention had to be given to ways of *acquainting the whole school staff* with the potentialities of television. Widespread interest was likely to follow widespread familiarity. In the winter before television was put to use, the Educational Planning Committee devoted an entire meeting to the problem of educational television. A camera manufacturer set up camera demonstrations in the faculty lounge where teachers could observe the equipment and operate it if they wished. Arrangements were made to have the professional help of the television engineer available to any who wanted to try using the equipment.

The need for *informing parents and the community at large* about the project was taken for granted. Before television was put to use, the local weekly paper and school publications for parents carried accounts of the project. Explanations were made to the Lay Advisory Council, the Parent-Teacher Association, and other groups. Community interest has continued to be lively and rewarding.

A last set of decisions were those about *evaluation*. Evaluation of student achievement in the two courses was vital, but evidence about the influence of television on learning conditions seemed equally necessary to exploring the new means of instruction. Priorities had to be assigned

to evaluations; *first,* of the kinds of achievement considered most important in each of the two courses and, *second,* to those learning conditions which were both basic to achievement and most likely to be influenced by the use of television. The priorities actually chosen have been included in a later section of this report in a discussion of what was found. Moreover, it was thought important to take account of the attitudes of the staff as a whole and of parents, as well as of the attitudes, activities, and work loads of the two television teachers.

Evaluation was to be as systematic and objective as first-year circumstances permitted, but help was to be expected from the reactions of a variety of persons—staff observers, consultants, visitors from other schools, parents, teachers, and students. Particularly in English-Speech was student participation in the evaluation process considered important. Evaluation data were to be available to teachers for planning their courses. Miss Wanda Mitchell, the English-Speech teacher, took on responsibility for directing the television project with the help of William Carpenter, the typing teacher. Dr. James Heald was to work on the evaluation of typing and parent and teacher attitudes, and Dr. Jean Fair the evaluation of English-Speech and the over-all integration of evaluating material. These four were to be the project staff, although they could draw heavily upon the advice and interest of the Principal, Dr. Lloyd S. Michael. The project staff was also free to draw upon generous help from two other speech teachers and an English teacher. More complete accounts than could be included in this report are available about the use of television in the classrooms and evaluation procedures and data, as well as the reports of consultants.

A great deal of work then had been done by the school staff before televised teaching began. Moreover, in the spring of 1956, the school was fortunate to have the help of several consultants: Dr. Cecil Bidlack, Consulting Engineer for the National Association of Educational Broadcasters; Dr. Philip Lewis, formerly Director of Audio-Visual Instruction at Chicago Teachers College, now Director of Instruction Materials for the Chicago Public Schools; and Dr. Irving R. Merrill, Director of Television Research at Michigan State University.

On the opening day of the school year 1956-57, after at least a year of intensive work, the school was ready to begin instruction by television. The school has believed that much of the success of the undertaking depended upon the careful planning in advance of actual teaching.

Using Television

Teaching by Television in Typing

Television was expected to fit easily into instruction in beginning typing. The common pattern of explanatory directions and demonstration followed by practice to learn the specific skill of typing was, as expected, very little changed.

At the beginning of each of two class periods in the afternoon, some seventy students entered their typing classrooms. Half of them went to a regular classroom, the originating room; the other half, to a viewing room several doors and a flight of stairs away. In the originating room were their teacher, two television cameras, a monitoring receiver, portable lights, and a microphone. The teacher began his instruction on camera. Students watched, listened, asked questions if they cared to, and then went to work at their own typing. In the viewing room, the other group of students found the clerical aide, two 21-inch television receivers, a talk-back system, and a monitoring camera. When instruction began, these students also watched and listened, but through a television receiver. They, too, asked questions if they cared to, but by a talk-back system. Then they, too, went to work at their typing. The teacher had been able to pace his directions and instruction for both groups by using his monitoring receiver or, of course, observing the group with him. While students typed, the teacher went about the originating room and the clerical aide about the receiving room to give individual help where it was needed. In each room, there was an apparently ordinary learning situation in typing.

All of the units of instruction, from learning the keyboard to typing difficult production materials included in a well-known and widely used first-year text in typing, were taught. Balancing and timing of instruction, demonstration, practice, and drill were planned for and easily managed in ways like those in non-televised teaching. The time in instruction and demonstration before the camera was about the same as the teacher customarily planned for without the camera. At the beginning of the course, this instruction time was sometimes as much as three fourths of the class period, but, by the end of the year, instruction time was brief, just as in non-televised instruction.

Television could focus attention and improve opportunities to see. Demonstrations of fingering and stroking techniques, key reaches, carriage return, paper insertion, paper removal, use of the shift key, reaches to numbers, and many other basic teaching practices were very effective over television, as was the use of such regular materials as wall charts, textbooks, and workbooks.

The regular blackboard was used extensively during the year. Large size television chalk was found superior to regular chalk. Pads of newsprint and black grease pencils were also used easily and effectively. All in all, the use of visual aids was probably increased.

Manning two vidicon cameras in the originating room were students who volunteered their services during free periods. In a monitoring booth adjacent to the second classroom was a third student who watched the image being recorded by each of the two TV cameras as they appeared on monitors. His responsibility was to decide momentarily which camera image was the strategic one to send—by a flip of a switch—to the second classroom.

The clerical assistant who proctored the second classroom was responsible for such duties as checking attendance, keeping records, distributing supplies, recording marks, and preparing requisitions. The clerical assistant was herself a capable typist who understood typewriting techniques and machine operation well enough to give individual help. The teacher and the clerical assistant met daily to discuss lesson plans and desirable approaches for most effective presentation. Frequently, technical personnel attended these conferences.

Students in the two classrooms were about like students in other typing classes and almost a cross-section of the student body.

Teaching by Television in English-Speech

Three sections of 2 English-Speech, a sophomore English elective with emphasis on oral activities, met each morning during the same period. The groups, representing almost a cross-section of tenth-grade students and each numbering between twenty and twenty-five, met in three adjoining rooms, two of which were supervised by cadet teachers who were seniors in the Northwestern University School of Speech. The third group met with the head teacher in an originating room, equipped with cameras, extra lights, and a control room. When a common activity which the teacher directed for the group in the room with her was telecast, the other two groups viewed the activity on two 21-inch television receivers, elevated to provide optimum viewing conditions. The three groups rotated in such a way that each student was with the head teacher in the originating room every third day.

In the originating room, the teacher or the student speaking or the discussion groups were located at the front of the room with two television cameras between them and the class. In the two receiving rooms, the students, under the supervision of the cadet teachers, watched the activities on television and participated as instructed by the teacher in the originating room. The talk-back system enabled students in each viewing room to ask questions whenever they wished. Both questions and answers could be heard in all of the viewing rooms. The teacher could call on students in any of the viewing rooms to participate in discussion or to answer a question.

The content and activities were selected to provide experience in all phases of the language arts: reading, writing, speaking, and listening. For example, in the fall, the biography, *Tiger of the Snows* by James Ramsay Ullman, was read outside of class. In-class activities included the tape recording, played back on television, of an imaginary on-the-spot description from a helicopter hovering over the mountain top as the victorious climbers planted their flag on the summit. A committee of three students conducted a televised interview with the mountain climbers after their return to base camp. A third group presented a televised style show of mountain climbing equipment and wearing apparel, with commentary written by the students. The three groups

conducted, without television, separate class discussions, evaluating the book as an example of modern biography.

Later, students selected a variety of individual and group projects during the study of *Julius Caesar*. Scenes were read by a cast of students in the originating room. Other scenes were read by students using talk-back microphones in two rooms with the teacher's comments coming from the originating room. Movies of the Elizabethan theater were shown on the television receivers in all three rooms. A close-up of a model Globe Theater was explained by the boy who constructed it and was telecast not only to the English-Speech viewing room, but also to other sophomore English classes meeting that same period.

The poetry unit was introduced by the cadet teachers, who telecast an interpretation recital to all three groups. Students wrote limericks about class activities and read them on camera to illustrate appropriate meter and figures of speech. In the study of rhythm and melody pattern, students listened to records of poets reading their own selections.

A functional approach to all composition problems was developed during conference periods, with individual students regarding their papers before and after writing assignments. Individual conferences were supplemented by class study and drill; for example, in punctuation. A typical week during this drill period included a day or two of explanation, illustration, and application by the teacher using blackboard, easel, and pull-out chart. Cadet teachers then administered a mastery test in each of the three rooms. According to scores on this test, students reported the last two days of the week to groups of these types: (1) those with lowest scores to work with the teacher on further explanation, illustration, and application; (2) those with fewer mistakes to give more study to their specific mistakes with cadet teachers; (3) those whose scores indicated mastery of punctuation to proceed with special interest projects in speech, relating to radio, television, and theater.

The activities in all units included experiences in speaking. The first week, students interviewed each other *via* television to acquaint the entire class with the members of each group. Speeches of the persuasive type were presented in the small sub-groups where students evaluated them and selected the best to be telecast to all three groups. During the literature units on plays, students telecast reports on their plays and, in some cases, joined one or two classmates in presenting selected scenes for the entire group. Panel discussions on teenagers' problems were followed by questions from all students in three rooms. Banquet speeches were presented by each of several small groups following explanation, illustration, and instruction *via* television.

Listening activities were a part of each day's work, of course; students were expected to listen to the teacher and cadet teachers. Moreover, they were to evaluate the reports and speeches given by other students. In the early fall, students used an outline guide while viewing a kinescope of Mortimer Adler's "How To Learn by Television" in each of the three

rooms and then discussed the questions posed by Dr. Adler's suggestions.

On the first day of each six weeks' marking period, all the students in the three groups met together in Social Hall, an adjoining small auditorium, to evaluate the previous six weeks and to suggest improvements for the following weeks. These discussions were frank, specific, and critical in a mature and constructive manner. Anonymous written evaluations were part of this periodic judgment.

Audio-visual aids were used by the teacher and by students making reports *via* television. Tear sheets, pull-outs, charts, pictures, flannelgraphs, and films were most commonly used. Films were presented on the television screen from a master control room without turning out the lights or interrupting the class routine in any way. Kinescopes and commercial television programs were available on the receivers in the classrooms.

The variety of these activities indicates rather clearly that the use of television for instruction in 2 English-Speech did not limit the teacher to lecture-demonstration. Student participation, inherent in an effective speech improvement course and in student-teacher planning, was not eliminated because of televising the instruction, although the number of opportunities for each student to speak before the entire group was cut down to some extent.

The cameras were operated by students. A crew of two students reported during their study period to set up and check the cameras, the microphones, the monitors, the receivers, the lights, and the talk-back during the period preceding the class period. A second crew of three students reported for the class period. Two of these students operated the cameras while the third served as a switcher, setting up camera shots and sending out to the classroom receivers the picture he considered most effective for the viewers. An inter-communication set enabled the switcher to direct the action of the cameramen at all times. No rehearsal or run-through was possible because the cameramen reported at the beginning of the regular class period; however, visuals and difficult group shots were checked during the set-up period. When the sequence of pictures was important and could be predetermined, the teacher prepared such a list for the switcher. In this set-up, the student switcher's duties and responsibilities corresponded to those of a director in a commercial studio.

The everyday scene in these classrooms included television. However, the outstanding feature of this scene was still the groups of interested students busy with the activities of the class session.

Using the Television Equipment

In both courses, the teachers faced the same all-important problem which teachers meet in non-televised courses—how to help students make the most progress in learning. However, the television teachers had to think through these problems with particular reference to the framework of television. Specific testing of each picture, checking the most

satisfactory lens and lighting, and experimenting with textures, colors, and techniques—these tests, conducted during the set-up period immediately preceding the class period, were essential to effective presentation. Every visual aid to be used during the class period, every grouping of students, every area to be lighted, every visible background was pre-checked for satisfactory pick-up.

The need for this preliminary check of satisfactory pick-up by cameras could not be over-emphasized. Each room, each lighting fixture, each object, each movement, and each camera had its own peculiar response which could not be predetermined with certainty by what happened in other rooms with another camera and another object. To avoid distractions which interfered with satisfactory learning conditions, it was necessary to precheck that which the camera was to pick up.

Using Television Throughout the School

It was important to keep all staff members abreast of what was going on in the school and to encourage them to think over the potentialities of television. Consequently, in the fall of 1956 as experimental instruction actually began, one faculty meeting was devoted to discussing educational television throughout the country. In two additional afternoon sessions, staff members discussed the use of television after they had observed a demonstration of studio facilities, a typing lesson, an English-Speech lesson, and the distribution of film *via* a television camera chain. Receivers were provided for teachers who wished to observe the instructional television during regular class periods. Many staff members visited both the originating and viewing rooms during the experiment. The television studio and the services of the engineer were available at all times for any member of the staff or any department desiring to experiment with special effects or to check the capabilities of the cameras and the type of pick-up possible with varying light conditions.

As a result, in addition to the daily use of television by the typing and English-Speech teachers, other departments throughout the school used the closed-circuit television facilities for specific purposes. The biology classes used the equipment successfully to magnify dissections for clearer viewing by large groups of students and to show demonstrations telecast by the local educational station for the Chicago Public Schools. Homemaking classes used closed-circuit television for student demonstrations of pastry-making techniques. The English department could make available to several classes an interview with an author speaking to one class. A librarian introduced new books and gave instruction in the use of reference books to three classes simultaneously.

The television facilities also fit into purposes other than direct instruction. When the three home rooms on the third floor had their division meeting for parents, a student panel conducting its regular discussion of student council problems was observed by five groups of parents viewing from regular classrooms.

Parents and other citizen members of the Lay Advisory Council watched demonstrations of television instruction in typing, English, and biology. Included in this group were parents of students who were being taught by television. Art teachers in this area tested materials, fabrics, articles, mosaics, sketches, water colors, models, and demonstration methods of teaching to evaluate their effectiveness in art education. Two retiring members of the Board of Education were honored with a television program featuring close-ups of contracts, charts, building diagrams, pictures, and newspaper clippings, visible to all those attending the dinner in their honor. A tour of the building conducted for school business managers of this area was supplemented by telecasting the schematic and floor plan to various points throughout the building for reference and discussion of cable installation at each point.

At the regular PTA Open House, parents of students enrolled in the typing and English-Speech classes met in the same rooms used by the students during class sessions and received instruction *via* television. Parents observed the procedure in action, had an opportunity to ask questions and make suggestions, and commented on the experiment in both oral and written evaluations.

All these uses of closed-circuit television occurred during the second semester. During the first semester major attention had to be directed to the televised classroom instruction in typing and English-Speech. Still, an increase in uses for television was apparent.

What the School Found from Its Investigations

The school was, on the whole, pleased with what its investigations showed as results of the use of television. Student achievement was generally satisfactory. Conditions for learning were good. The school has had high standards in both, with which the use of television apparently did not interfere. Some gains were made in the effective use of teacher time. Attitudes toward the use of the new instrument were favorable.

The evaluation staff collected a great deal of evidence on which to base some answer to the questions asked by undertaking the experiment. The evidence came from tests, questionnaires, students' work, anecdotal records of one sort or another, the reports of visitors, and staff observations. Moreover, the school was fortunate to have a number of consultants from nearby universities: Dr. William G. Brink, of the School of Education, Northwestern University; Dr. Russell B. Cansler, Director of Business Education, Northwestern University; Dr. Thomas Hastings, Director of the Bureau of Educational Research, University of Illinois; Dr. Richard B. Hull, Director of Radio-Television Broadcasting, Ohio State University; Dr. Mark Neville, Headmaster, Chicago Latin Schools; and Dr. Karl Robinson, Chairman of Speech Education, Northwestern University.

The school has placed considerable confidence in the evidence and judgments gathered, and enough to use them in revising and extending its program for the future. Still the limitations of the evidence should be frankly recognized. In the first year of teaching courses by television, not all the "bugs" could be eliminated. The "first tries" were quite successful as such, but they could not be an entirely fair test of the potentials of closed-circuit television. Enrollments in the two courses and teachers' schedules made it impossible to set up entirely adequate control groups with which to compare the experimental groups using television. Although objective and reliable measures were used wherever possible, judgments of undetermined reliability had to be used elsewhere.

The sections which follow consider, *first,* achievement in beginning typing and, then, learning conditions; *next,* achievement and then learning conditions in English-Speech; the use of teacher time; and, *last,* attitudes toward the use of television.

Generally Satisfactory Achievement in Typing

Unlike English-Speech, the beginning typing course had one primary objective, developing skill in typing both personal and business materials with speed and accuracy. The staff aimed to find out not only how well students in televised classes achieved this skill, but also whether those in the originating room achieved any more skill than students in the viewing room.

Apparently, typing students taught by television attained *skill in typing* comparable to that of students taught in non-television courses. There were only chance differences between the year-long average scores on tests and scores of the maximum number of words typed per minute of television students and those of a comparable group of students taught by the same typing teacher without television the preceding school year. The average of 48.5 words typed per minute was a satisfactory level of achievement for these first-year typing students. Moreover, there were no real differences noted in the achievement of originating room and viewing room students. One of the consultants, Dr. Russell Cansler, saw ". . . no great difference in the fingering abilities of students in either room. Their hand position, finger reaches, stroking techniques, and posture seemed to be about equal in the two rooms, and students in all classes appear to be about where one would expect them to be in fingering and position ability if they had been taught without television."

Generally Satisfactory Learning Conditions in Typing

It seemed possible that television might interfere with what was basic to good conditions of learning, the *teacher's opportunity to know students well enough.* He needed to be able to work out objectives and learning activities at appropriate levels and to provide necessary guidance in the process of learning.

Television did not prevent the teacher from providing for his students. He felt that he did not know the students well as persons.

He did feel he knew them well as typists from watching them at work, from evaluating their typed papers, and from individual conferences—and as well as he needed to know them or customarily knew them. He was not handicapped in providing the usual individual help in learning experiences appropriate for developing a skill. The classroom aide in the viewing-receiving room gave about as much individual help as did the teacher. Moreover, the fact that his teaching was to be televised acted as a spur to seeing that instruction was directed at just exactly what students needed to have clarified.

Student perceptions of the learning situation seemed consistent with those of the typing teacher. Many of the students themselves, forty-two per cent in the originating room and fifty-eight per cent in the viewing room, reported by questionnaire that they knew their teacher less well than they knew their other teachers; other students felt they knew him only as well. However, they were almost unanimous in their belief that they received all the help necessary to learn to type effectively and as much or more than in other classes.

Student participation in learning activities was the second area considered. Students could see demonstrations of typing techniques at least as well and probably better. The teacher, visitors to classes, and consultants all agreed that there was no loss either in actual typing practice or other kinds of participation either in the originating or the viewing room.

Another condition which seemed important was that of *motivation.* The staff has sometimes been asked about what is closely related to it, *discipline.* The great majority of students in both the originating and viewing rooms saw discipline, by their definition, as at least as good as in other classes. The teacher and consultant observers probably defined discipline somewhat differently, but by their definition student discipline was satisfactory in both the originating room and the viewing room. In fact, they saw the use of television and the subsequent removal of the teacher from remote classrooms as fostering a desirable self-reliance in students. Moreover, students were convinced that the increased demand by television for self-reliance was a highly desirable outcome of the course.

The teacher saw no more difficulty in motivating students in a course using television than in one without it. Visitors from other schools, all of them familiar with high-school students, rated students' motivation as equal to or better than the motivation of other high-school students they had seen. Over ninety per cent of these visiting teachers felt that the interest of students equalled or surpassed the interest of comparable students they had known. Students themselves told the staff, by anonymous questionnaire responses, that their interest in learning typing was high.

Moreover, three fourths of the students in these typing classes stated on the same questionnaire that the course was "of great value" to them,

while the remainder believed it "of some value." Students indicated a great deal of satisfaction with the course.

The evaluation staff had not expected the use of television to affect *other kinds of learning conditions* and found no reasons to change this expectation. Standards were maintained. Except for an increased use of visual aids, materials were the same. Neither students nor teacher saw changes in interpersonal relationships which ought to be attributed to television or which interfered with learning. Sequence in learning experiences was undisturbed. Evaluation methods were as usual.

One teacher with the help of a clerical aide and closed-circuit television was actually able to give effective instruction to more than one class of students in one period.

Generally Satisfactory Achievement in English-Speech

In contrast to beginning typing, the English-Speech course, as a language arts program emphasizing speaking, had several objectives, some of them complex abilities. Here the evaluation staff aimed to find out only the extent to which important kinds of student achievement were adequate; there was no division of students into originating and viewing room groups.

Achievement, on the whole, was satisfactory, and satisfactory in terms of the high standards which the school has consistently expected of its students. The evidence suggested particular strengths and weaknesses in some areas.

Students in the televised English-Speech course obtained about the same final marks as did a comparable group of students in the course taught the year before without television. Moreover, the television students had somewhat higher marks than might have been expected on the basis of their I.Q. scores. These pictures of the *general level of achievement* were consistent with those of more specific kinds of achievement.

One of the most important of these was *ability to write clear and effective prose*. The use of television evidently did not interfere with the development of this ability. Students in the TV group made at least as high marks on the school-wide spring examination in written composition as did students in the non-TV course of the preceding year, and at least as high and perhaps higher marks than might have been expected on the basis of I.Q. scores. Another aspect of this ability was that of using the "mechanics" of English correctly and appropriately. Here the TV students made marks on the school-wide spring English test somewhat lower than those of the non-TV group of the previous year, but about the same as might have been expected from I.Q. scores.

Ability to understand and interpret literature was another important objective of the course. If using television limited this kind of development, it seemed to do so only in what were for tenth-grade students the most complex aspects. The scores of students in the English-Speech course on a school-wide spring test of ability to read and interpret a

short story were about like the scores of a group of students with comparable I.Q. scores in regular English classes. The teacher herself thought that students were about as able to understand the literature commonly read in the school's tenth grade as they ought to be. However, she had some doubts about whether students developed as much depth of understanding as they should. Three of the four staff observers who had frequent opportunities to observe judged students' evaluations and analyses of individually chosen plays as somewhat below what they had expected.

The staff was particularly interested to see whether instruction based on television might limit the development of *ability to listen with some critical comprehension* to a variety of material. Apparently students gained as much as did students in regular and non-televised English classes. Fall and higher spring scores of the English-Speech group on the STEP *Tests of Ability To Listen*[2] were not significantly different from scores of a group of regular English students having comparable I.Q. scores.

Students made generally adequate progress in the highly important *ability to speak effectively for a variety of purposes,* but with weaknesses in some of its aspects. Three qualified judges rated student speeches in January and June and judged achievement, on the whole, adequate. However, they more often rated students lower in aspects of speaking related to content and thinking than in other aspects such as diction, pitch and quality of voice, English usage, or enthusiasm. Something of this same thread ran through the reports on individually chosen plays, which were mentioned above, and group discussions, which will be mentioned later. The teacher, too, judged that, although student achievement in general terms was satisfactory, some students could have strengthened their content or learned to deal more adequately with unforeseen situations which put them "on the spot."

Closely and importantly related to ability to speak was liking to speak and a feeling of self-confidence in doing so. Television did not stand in the way of such growth, as students had opportunities to develop their abilities. Almost immediately after giving speeches in October, January, and June, students filled out an anonymous questionnaire describing their feelings about and satisfactions in speaking. Their responses showed a strong trend toward more and more positive feelings about their own speaking. For example, although about seventeen per cent in the fall reported "a great deal" or "some" enjoyment while speaking, with "all right" the most popular of five choices, eighty-one per cent reported "a great deal" or "some," with "a great deal" by all odds the most popular choice in June.

What is more, students reported in fall, winter, and spring much more "liking" for the speaking activities of the course than "indifference" and

[2]The school wishes to thank the Cooperative Test Division of the Educational Testing Service for making copies of Forms 2A and 2B of the test available in advance of publication.

only very little "disliking." These interests were maintained as the activities grew more difficult and complex.

Neither did television prevent the growth of a *wide range of interests in the activities in the course.* Students' responses to questionnaires at four points in the year consistently showed much more "liking" than "indifference," and almost no "disliking" for many kinds of activities. Still another indication of the growth of desirable interests came from the high proportions, at the least seventy per cent, of the students, who chose voluntarily to attend performances of three plays which the group had arranged to attend together.

Students were expected to learn *to find and evaluate sources of information and literary selections of many kinds.* Their marks on a school-wide test of knowledge of sources and techniques for locating materials were at least as good, and probably a little better, than might have been expected on the basis of their I.Q. scores. Students had many opportunities to find and evaluate sources themselves. Still the staff found the distribution of their marks interesting since all formal instruction had been done over television.

Generally Satisfactory Learning Conditions in English-Speech

The kinds of learning outcomes expected in English-Speech were unusually dependent upon the *teacher's opportunities to know students well.* There was real concern about the extent to which television might limit these opportunities. Some, but not great, limitation may have occurred.

The teacher continued to feel that television was something of a barrier between her and the students. However, the evaluation staff and even the teacher believed that she felt it more of a barrier than it actually was.

First, the teacher found it possible to reduce the degree of impersonality. For all or part of many class periods, the TV camera was switched off, most frequently to allow students to work in small groups. The teacher was always present in some group and with each of the three basic groups every third day. She learned to recognize student voices over the talk-back system, watched students carefully over television, paid attention to what they wrote, and made a point of giving friendly interest and help outside of class time. She held at least one individual conference with each student during the fall and additional conferences later, and evaluation sessions with the whole group at the end of each unit. She had available some of the data we are reporting here. The use of television made it necessary to give special attention to ways of knowing students as persons, but it did not mean that the teacher could not know and give guidance to individuals in learning.

Students were asked for their perceptions of this aspect of the learning situation by means of three anonymous questionnaires in the late fall, late winter, and late spring. Even in the late fall, but increasingly during

the year, the majority of students felt themselves "known," at the least, "fairly well" by the teacher and, interestingly enough, "known" as well as and even better than they were known by their other teachers. Similar statements can be made about their feeling of "knowing" the teacher. After the first ten weeks or so, and increasingly thereafter, the great majority of students felt that they were getting about all the individual help they needed and that they were getting as much and even more than in other classes not using television.

Cadet teachers were assigned to each of the three basic groups, a different set each twelve weeks of the year. In the fall, the great majority of students felt that they "knew" and were "known" at least "fairly well" by their cadet teacher, but the proportion of students feeling so dropped off during the school year until the picture was quite different. In the spring when they were asked to compare their "chances" with the teacher and their cadet teachers, about a third of them expressed some dissatisfaction. These feelings are evidently related to inadequacies in the plan to use cadet teachers as teacher aides.

At any rate, the teacher's instructional efforts, and perhaps an illusion of closeness from the television screen itself, led to students' perceiving the learning situation to a considerable degree as one in which attention was given to individuals and their problems in learning. Such perceptions are important in themselves.

Still a substantial part of guidance in learning activities had to come from cadet teachers. The teacher, three of four staff observers who made frequent observations, and three of the consultants all judged the competencies of cadet teachers as somewhat inadequate for such guidance. Staff observations led them to believe that cadet teachers were least competent in helping students in complex activities; for example, in formulating a problem, in increasing depth of understanding, in developing ability in discussion as distinguished from recitation, and in diagnosing sources of difficulty.

The teacher herself found many opportunities to help students. The use of television led her to prepare for each class session with increased care. Television allowed her to point out to students strengths and weaknesses in on-going activities without interrupting them. But the teacher could be in only one group at a time and there were sixty-three students in all. It is likely that students sometimes needed help "on the spot" which was inadequately available, particularly for the most complex activities. The evaluation staff thought that the basic structure of the course as it was developed, that is, one relying on cadet teachers as teacher aides, reduced the amount of, but by no means eliminated, the attention to individuals, probably very little in the selection of objectives and learning activities, but more in the guidance of learning. The structure developed, however, was not the only one which might have been developed to use television.

Another and closely related concern was the degree to which students had *opportunities to learn to do what they were expected to learn, to practice.* There was some indication that students had somewhat fewer opportunities, particularly in speaking.

Finding time for sixty-three students to speak before a group was difficult even though students could sometimes speak off-camera in their own groups. The year before, when the course had been set up without television, students gave fifteen regularly assigned speeches as compared with about twelve speeches of some sort with television. These numbers seemed consistent with the observations of the teacher, two staff observers, and consultants, as well as with student achievement.

The evaluation staff thought the amounts of some kinds of discussion were reduced. The lack of visual clues from two thirds of the students led the teacher to over-estimate occasionally the time needed for explanation. Moreover, the sheer numbers of students and the talk-back system were sometimes cumbersome, and the need for fitting in opportunities for speaking probably decreased class time available for other activities.

Again students were asked for their perceptions by means of a questionnaire. Even in the fall, and consistently thereafter, three fourths of them saw "enough" or "almost enough" opportunities to participate, with the former as the most popular of four possible responses. Approximately seventy per cent saw about as much or even more opportunity to participate in English-Speech, but by spring the proportion reporting "more" dropped from twenty-seven to ten per cent. It is quite clear that students did not view the learning situation as a lecture-demonstration which they merely "absorbed," but as one which encouraged a good deal of participation although with some limits.

What is more, there were many kinds of "opportunities to practice" which were either little affected or not necessarily so by the use of television; for example, writing and reading of many kinds, listening, evaluating speeches, and finding and evaluating materials.

The teacher intended, of course, to see that learning activities offered enough but not too much *challenge and difficulty.* For the most part, the teacher used the same kinds of methods teachers ordinarily use, knowing students and their abilities, writing comments on papers, and the like. Still television did allow students to see and hear many levels of achievement and the teacher's evaluative comments.

During most of the year, about ninety per cent of the students reported by questionnaire that the course was "just about right . . . (for) learning new things . . . without finding them too difficult" as distinguished from "too easy" or "too difficult." Still a little more than half of the group reported at two points during the second semester that they worked outside of class on the average a "little less than a period" a day. The school regards a period as desirable. The use of television may account for somewhat less out-of-class work.

An illustration may be appropriate here. Only about a fourth of the students reported by questionnaire that they were dissatisfied with their small-group problem discussions, whereas the teacher and three staff observers judged some of these discussions as based on an inadequate collection of information. Not enough preparation time had been allowed in a crowded schedule; the teacher could not give all groups all the help they needed; cadet teachers were not competent enough. Discussion for tenth-grade students is a complex activity requiring skillful guidance from a teacher. However, if there had been sufficient time and some alternate learning activities for students not working on discussion preparation with a teacher, students might have worked more to raise their discussion standards.

This point should not be over-emphasized. The staff observers did not rate these discussions as "poor." English-Speech activities ordinarily have a higher proportion of "long-term assignments" for which students often need to learn to manage their study time better. There was no increase in the amount of overdue work. The school knows from another study that Evanston students do not report satisfactions from courses which expect too low a quality of work. Student achievement was generally satisfactory. The structure of the course which was developed for television may have brought about somewhat less work but, in general, it did not interfere with students' working at what was meaningful, fruitful, and sufficiently difficult. Neither did the evaluation staff see too low standards as inherent in the use of television.

The materials of instruction in the conventional sense were unchanged. The kinds of literary selections, texts, films, and filmstrips, reference sources, and models used in English-Speech without television were still appropriate. Using television encouraged the teacher to use more visual aids, such as charts and tear sheets. They might have been just as valuable in a non-televised course.

Television itself, however, was a part of our instructional material. Students were interested in the equipment from the start and continued to be attracted by it. As late as March, they reported on a questionnaire that, even though the camera frequently interfered with their vision, they preferred to meet in the originating room for a variety of reasons related to the use of television and not primarily because the teacher was usually there. After the first few weeks, students used the talk-back mike frequently even if they had to get up from their chairs and walk over to it.

There were limits to the attraction of television. Although the staff considered showing films over television an advantage by saving class time, the majority of students preferred a break in the routine or the larger screen of the projection room. In the fall, students' questionnaire responses showed a reluctance to speak over television individually although not as part of a group. By early winter, though, this reluctance

was disappearing, until in the spring more than half chose to give their all-important final speeches over television.

Part of the less conventional "materials" in English-Speech were the audiences to which students spoke and the groups in which they worked. Because *interpersonal relations* were bound to influence development in the English-Speech course, the teacher gave constant attention to them. The use of television did not seem to prevent the development of such interpersonal relationships as were basic to learning in the course.

It has already been pointed out that students felt they knew and were known individually by the teacher and that they were growing in self-confidence in speaking. By questionnaire, students were asked three times for their perceptions of their audience. In October, only six per cent saw it as "helpful and friendly," the most favorable choice on a five-point scale, while sixty per cent saw it as "too critical and not really helpful," the least favorable choice. By June, however, seventy per cent chose the most favorable response and only two per cent the least favorable.

In order to build up a feeling of security within the whole class group and the three basic sub-groups, the teacher restructured sub-groups in December on the basis of sociometric data. The great majority of positive expressions given three times thereafter toward the sub-groups and the large number of temporary and special sub-groups made further restructuring unnecessary. In the last spring, the teacher repeated the December sociometric question, less valid since no consequences followed choices. A comparison of the data was interesting. Almost all of the few students of very high status were of better than average competence, although not all unusually competent students had such status. Higher status was open. Only a very few students were not chosen at all. The two pictures of the group were neither of mere aggregations of individuals nor collections of cliques. Sub-group cohesiveness was a little stronger in the spring and strong enough to account for a majority of choices, but not too strong to prevent about a third of the choices from being made outside the sub-group.

Dr. Karl Robinson, who had opportunities to observe the group throughout the year, saw *esprit de corps* within the class, but judged it less "close and effective" than in ordinary speech classes.

The staff had not expected television to create "poor discipline," nor did it. *Discipline* is difficult to define. Cadet teachers tended to think of it as the absence of noise and movement and a problem of great concern to them as inexperienced teachers. Five of the nine cadet teachers replying to a short questionnaire saw discipline as poorer in English-Speech than in other classes. Teachers, staff observers, and consultants tended to see discipline as students' responsibility for not interfering with others' opportunities to learn and for directing themselves in accomplishing worth-while learnings. These people noted some "hum and bustle" which occurred during "business transactions" at the

beginning or end of class periods and which probably accounted for cadet teachers' reactions. Yet the teacher and other observers considered students about as involved and attentive, and perhaps even more so, in actual learning situations as students ordinarily are. Dr. Mark Neville, for example, observed that, "The concentration on the screen seems to be greater than the concentration on the teacher in the non-televised situation. It is understandable that those students who are not concentrating on the screen are not bothering anybody else, which cannot always be said of the traditional classroom situation." *Discipline* simply looked a little different in a television class.

There was no magic in the television screen which automatically held attention and thereby created good discipline. Neither was the daily presence of the teacher needed to insure it. Good discipline was, as one might expect, more dependent upon such factors as motivation than on television. Moreover, there was no reason to believe that the use of television in itself made it easier or more difficult to develop *motivation.* In fact, most of the visitors from other schools thought students better motivated than others they had seen.

Closely related to motivation are student *satisfactions* from their learning experiences. Again neither the evaluation staff nor the consultants saw the use of television as interfering with satisfactions, except insofar as the weaknesses in learning conditions already mentioned influenced success and presumably satisfaction from specific activities. Students were asked by fall, winter, and spring questionnaires for their estimates of value and satisfaction in the course. Three fourths or more of the group reported "great value" and "a great deal" or "quite a lot" of satisfaction, with "a great deal" the most popular choice on a five-point scale.

No marked interference with a considerable degree of sensible *sequence and integration* in students' experiences was observed. The larger number of students and a busy class-time schedule meant that some students or groups could not always explore relationships in experiences fully. Still, a like statement could be made about many a non-televised class in many a teacher's busy schedule.

Closed-circuit television was not expected to interfere with *evaluation* except perhaps in opportunities for student self-appraisal. Actually there was little interference even here, except that students could rarely hear their peers' evaluation of their speeches. In fact, the STEP *Test of Ability To Listen* was administered over television with some gain in uniformity of administration and the administrator's time.

The observations of consultants have been mentioned frequently. Dr. Van Miller, Dr. Mark Neville, and Dr. Karl Robinson each noted positive and limiting influences of the use of instructional television. Dr. Miller did consider that, "The attitudes and activities of the sophomore students taking English-Speech . . . are typical of students at this level. One would except that achievement test data and any

data from satisfaction and attitude scales would compare favorably with that taken from other classes in the school."

With the help of television and cadet teachers, the English-Speech teacher was able to instruct three groups of students in one period without lowering the school's expected standards of high levels of achievement and fruitful learning conditions. Television made some positive contributions to learning, but imposed some limitations also.

Teacher Time Was Used Differently

The school's experiences showed that, by using television, teacher time and energy could, to some extent, be "saved" from some areas to be used in others. *First,* by teaching more than one class in one period, teachers "saved" time spent in activities actually carried on in front of a class. Since the typing teacher taught four classes in two periods of time, he "gained" two class periods of time each day. By teaching three classes in one period the English-Speech teacher "gained" two periods. In such a skill subject as typing, it seemed possible to increase the number of classes taught in one period; the limits lay in such factors as the number of available typewriters and the problems of program scheduling.

Teaching by television required more preparation time, however. Although this time requirement might not be inherent in using the instrument, both the teachers using it daily and those using it incidentally felt required to plan more carefully. Insofar as this preparation improved instruction, it can be counted as gain; insofar as it merely changed methods of instruction, it was loss.

Particularly during a first year, many extra hours had to be spent on preparation for teaching. Since the common pattern in beginning typing with and without television was explanatory direction followed by some kind of demonstration and practice, these extra hours were fewer than in English-Speech. There the activities of the class involved so much student participation that a complete reorganization of class plans was necessary for effective television presentation. A teacher lecturing or presenting a demonstration was one of the easiest pictures to televise effectively, even by amateur camera crews. Movements of groups of students were extremely difficult to pick up. Even more difficult was the problem of following with a camera the center of interest when that interest varied with the spontaneous, impromptu reactions of more than twenty teenagers. In a regular classroom, going to the dictionary to look up a word might be a valuable learning activity; it was doubtful that watching someone do so on a television screen was meaningful. Each activity of the English-Speech units had to be re-examined and evaluated as to its effectiveness for this new medium of presentation.

The use of student cameramen and the fact that the teacher was his or her own director-producer required more time in planning, in obtaining supplies, and in checking visual aids than would be required in

an educational television organization employing special personnel for these functions or in a course not using television.

The preparation of effective visual aids, artistic and, at the same time, proper in size, color, proportion, and texture for television, required much time. The average classroom teacher has not been skilled in time-saving techniques, efficient methods, or clever means of interpretation, which have been a part of the training of a commercial artist or regular art teacher. It is obvious, on the other hand, that, after one year of teaching a course *via* television, many of the visual aids would be prepared or readily available; furthermore, the teacher would be more efficient in preparing, in locating, and in using graphic materials. When course plans remain comparatively constant, as they may in typing, the need for many new visual aids each year would not be so great as in constantly changing courses such as English-Speech where topics and discussions are based on individual interests or current problems.

In courses where interpersonal relations are important, the use of television both requires and allows more time for individual conferences.

Non-professional aides could assume many of the routine duties of teachers, such as recording marks and collecting papers. They were most successful in giving individual help to students in learning whatever could be specifically and concretely defined. In these areas they "saved" teacher time. Non-professional aides were not successful enough to meet the school's standards for giving help in complex activities such as diagnosing sources of difficulty, real discussion, and critical thinking. Teachers did have to spend some time in conference with their aides.

Some teachers in the school taught several sections of the same course in one school day. When class activities were much alike from period to period in the day, the teacher "repeated." This repetition was monotonous and energy-consuming. The use of television to teach these sections simultaneously could save not only time but also energy. A librarian, for example, found it less tiring to give instruction in the use of the library all at once.

The two television teachers used their time differently and productively during a year of try-out. No reliable estimate of time "saved" for other professional activities could be made the first year, although the typing teacher felt that he "gained" more than did the English-Speech teacher. The faculty of the school, like those elsewhere, has needed more time for class preparation, curriculum planning, counseling students, meeting with parents, studying developments in the field of education, and a host of other professional activities. One year of the use of television has, at the least, encouraged the school to look further into the utilization of teacher time.

General Acceptance of Television

The best indication of the *television teachers' attitudes* toward teaching with this new instrument came from their plans to continue to use it

the following year. However, they have made their beliefs more explicit. What they have said has been included below.

The typing teacher spoke as follows:

Teaching over television is interesting and challenging, partly for what it may contribute to education and partly for what it contributes to a teacher in new abilities and outlook.

The growth of teacher self-confidence will depend on his own ability to teach his subject and on what he sees as possibilities and limitations in television. He needs some practice before the camera, with the microphone, the talk-back system, and other electronic and mechanical aids before commencing to teach.

The teacher is apt to feel less secure under television conditions than in the conventional classroom. He will feel the necessity to extend and project his teaching techniques and personality to greater numbers in remote classrooms. While the typical close shot of the camera, showing only head and shoulders, does provide an intimacy between the teacher and the class, the teacher may feel somewhat limited in control and direction by having only this one-way eye-to-eye contact.

Television teachers will probably want to take greater pains with personal appearance because they come under closer scrutiny when on the screen. Diction and enunciation also take on increased importance. More careful choice and use of visual items must be made in instructional television.

The teacher should be free of concern about mechanical aspects of television to do his most effective teaching. The utilization of a full-time engineer and capable student technicians made this freedom possible.

Television teaching is energy consuming. The control of greater numbers of students, the need for split-second timing, exact lesson planning, the presence of visitors and critics, all require much of the teacher.

The English-Speech teacher made these remarks:

The responsibility of experimenting with new techniques, the fear of the unknown, the constant scrutiny of visitors, the fishbowl atmosphere of the daily class session combined to create more tension this first year than would be expected to continue after teacher and pupils have become more familiar with the medium. In a regular classroom, we accept as normal an occasional day when the lesson does not "click," but the pressure of large numbers of students viewing seems to magnify in equal proportion the seriousness of any error or mistake in judgment.

Because the telecast tends to center attention on the teacher and her presentation, there is constant need to avoid becoming a performer demanding the limelight rather than a teacher. The study of kinescopes of her teaching can assist the teacher in improving her methods if she does not become so self-conscious that she can no longer concentrate on the pupil in the learning process.

These effects on the attitude of participating teachers are wholesome and result in better teaching. It is thrilling and stimulating to participate in new methods and to evaluate more carefully than we usually do the *status quo*, including the aims and purposes of each thing that we do.

Both teachers found personal satisfaction in their experiences, even though both felt some insecurity.

The attitude of the non-participating members of the staff varied from curious neutrality to cautious acceptance. There was no active opposition, although a few teachers felt that the instruction in their particular subjects could not be satisfactorily presented by television. Most of the faculty expressed informally much interest in the project and followed the results throughout the year without evincing any eagerness to participate in a similar type of experiment.

More teachers expressed confidence, by questionnaire, in television as a supplementary aid to learning than as a full-time aid. About half of the staff could see at least some uses for the instrument in their own classrooms. Teachers who had watched instruction by closed-circuit television saw more possibilities for its use than those who had not. There were no differences in attitudes among teachers from subject field to subject field.

A few teachers felt this medium of communication offered enough genuine advantages for more effective teaching to request the opportunity to experiment with instructional television in some or all of their classes next year.

Students assigned to the television sections of the beginning typewriting and English-Speech courses were generally well pleased with their television experiences. Over ninety per cent of the students reported by questionnaire that they felt they learned typing just as well by television as without. When the students themselves were asked if they would recommend similar courses for their friends, over ninety per cent responded with an enthusiastic "yes." Even viewing-room students in the typewriting experiment responded almost unanimously that they would recommend assignment to a viewing room. Students were convinced of the course's values, and over ninety per cent of the students believed that the ultimate value of the course was not affected by the use of television.

About ninety per cent of the English-Speech students, too, reported that they would recommend their friends' enrollment in a televised English-Speech course.

About eighty-five per cent of the students' parents, who stated that their children talked about their experiences at home, reported that the comments of their children were predominantly favorable. It was no surprise, then, to find the same proportions of students enrolling for the succeeding year in both beginning typing and English-Speech, even though students expected these courses to use closed-circuit television.

Parents' attitudes, too, were generally accepting.

Parents of both typing and English-Speech students reported by questionnaire that they felt the use of television had little effect on their son's or daughter's achievement. Not even objections to assignments to viewing rooms appeared. Only a fourth of the parents reported that they had been concerned at the first over an anticipated loss of individual attention for their child or of classroom discipline; these fears melted

away. The great majority of parents considered the nature of a course or the quality of teaching the important matters to consider in choosing courses, not the use of television.

Many parents had witnessed a demonstration of the techniques employed in teaching their children by television, and the vast majority had read some of the periodic news releases prepared by the school. Parents' attitudes developed in an atmosphere of opportunity to become acquainted with instructional television.

Equipment and Costs

The school's equipment worked out well. In addition to electronic cable, television cameras and receivers made up the major part of equipment used in the school. Electronic impulses generated in the television cameras and microphones were routed through patch panels, roughly analogous to telephone switchboards, to the television receivers located in the viewing rooms. The patch panels themselves were located in three zone-control rooms. Since two cameras were trained on the teaching situation, two monitors were needed to allow the switchers, also located in a control room, to select and route the most appropriate pictures to the receiving sets.

Seven cameras, Dage industrial vidicons, were purchased; each camera was subsequently equipped with a turret of three lenses varying in size from one to three inches. During the school year, one of the cameras was outfitted with a zooming type lens, very satisfactory in situations which demanded rapid changes in magnification.

Twenty classrooms were outfitted with 21-inch television receivers. These were placed on specially designed stands which set the face of the screen at desirable angles. Rollers on the legs of the receiver stands allowed easy transportation from place to place.

In addition to cameras and receivers, much other electronic equipment was necessary: microphones, amplifiers to boost weak electronic signals, special receivers for use as monitors, special film and filmstrip projectors, headsets and mouthpieces for use by the technical personnel, camera mounts, and a variety of electronic testing equipment.

The purchase of electronic equipment was costly; plans had to be made for writing off the expenditures over a period of time. Over $30,000 was spent in equipping twenty classrooms for the Evanston project. This cost reflects equipment of originating rooms more than equipment of viewing rooms. Additional viewing rooms can now be added for much less than the school's average cost of $1,500 per room, while additional originating-room costs will be much higher than this average.

Many factors, such as the quality desired, quantity purchases, brand names, and requirements for specific courses enter into the ultimate cost of a television installation. It is impossible to make a general estimate of the costs involved in closed-circuit installations. Only by a careful analysis of local needs can a school district predict installation costs. Then these costs must be judged in terms of their expected return.

What Can Be Applied from the School's Investigations

The school's experiences with instructional television were pointed up in what have been called here "factors not necessarily changed," "difficulties," and "plus factors." The school itself expects to use these in planning for extending the use of its own television facilities. It also hopes that these suggestions from its experiences will be useful to other schools.

Factors Not Necessarily Changed by Television

1. *Transmission of Information.* Information can be transmitted from one room to an unlimited number of receiving rooms.

2. *Group Rapport.* It is possible to establish and maintain class rapport and wholesome group relations when various sections of a class have the same television teacher.

3. *Interest.* It is possible for a television teacher to arouse and sustain interest in a subject.

4. *Achievement.* Test results indicate that students taught by television can achieve as well in those objectives of the courses tested as do students in regular classes.

5. *Acceptance.* Teachers, students, and parents accept instruction by television when they have opportunity to understand it and when plans for use are carefully made.

6. *Individual Activity.* Students can practice an individual activity, such as typing, which depends comparatively little upon other students' activities, in about the same way as in regular classes.

7. *Viewing Rooms.* The fact that students meet in a viewing room does not in itself limit their opportunity to learn.

8. *The Quality of Teaching.* Television can transmit good teaching; it could also transmit poor teaching. The need for experienced, capable teachers still exists.

9. *Using a Camera.* The fact that closed-circuit television is available for use does not mean that it ought to be used all of the time for all purposes. Many worth-while activities can and should be carried on with the camera off; for example, individual study and reading, small group work, and laboratory practice.

10. *Voluntary Effort.* Teachers should choose to use television if they are to make the best use of it. Required use by those unable or unwilling is less likely to result in the most effective learning situations.

Difficulties Encountered in Teaching by Television

1. *Loss of Class Time Opportunities.* When seventy-five pupils normally grouped in three classes with three teachers are combined in one group taught by a television teacher, it is difficult to provide sufficient class time for individual students to give speeches, to make reports, and to participate in discussion.

2. *Focus on a Few.* To insure good television production, the tendency is to center the lesson and activity around the teacher or a very small group of students rather than around the entire class.

3. *Formal Activity.* To insure good television production, the tendency is to concentrate more on formal activity which can be predicted and planned in advance rather than on spontaneous activity which may occur out of camera range.

4. *Fewer Cues from Students.* The teacher has fewer visible cues to indicate reaction of students. The students in the originating room provide a fairly reliable barometer of student response, but not the total reaction.

5. *Fewer Questions from Students.* It is more difficult for the student to ask questions. Although the use of the talk-back microphone tends to eliminate unnecessary, interrupting questions, it also makes a large number of questions more difficult to ask.

6. *Reduced Communication.* Speaking experiences are somewhat unrealistic because part of the audience is a camera lens. Two-way communication between the speaker and his whole audience is hampered.

7. *Less Professional Help.* One of the most important parts of the learning process may be left to a person less well-qualified than the teacher. In English-Speech, this person was the supervising cadet teacher in the receiving room, the individual least experienced in structuring learning environment. The cadet teacher is least able to help students with complex learnings such as actual discussion, interpretation, formulating problems, evaluating oral activities, and diagnosing sources of difficulty. However, television does not require cadet teachers; other kinds of personnel could be used.

8. *Pre-service Training.* Supervising a receiving room does not provide as practical an experience for the cadet teacher as the regular classroom experience. However, regular classroom experience can be provided elsewhere in the cadet teacher's program.

9. *Group Discussion.* Instructional television does not provide the best environment for group discussion.

10. *Guidance of Individual Learning.* It is more difficult for the teacher to keep in close touch with the in-class progress of each student when numbers of students are large. However, a competent non-professional aide or the use of other methods of out-of-class communication help to compensate for this difficulty.

11. *Loss of Color.* Black-and-white television cannot reproduce as effectively those experiments, illustrations, and demonstrations in which color plays an important role.

Plus Factors in Using Instructional Television

1. *Films.* Because there is no interruption of the class routine to set up a projector, to lower the shades, or to take students to another room, because lights can be left on for notetaking, and because film clips, entire films, or slides can be inserted unobtrusively into the discussion, some teachers feel that films can be presented more effectively *via* the television receiver. However, there are occasions when a break in class routine or a picture on a larger screen in a darkened room may be advantageous.

2. *Uniformity.* When uniformity of explanation or direction or instruction is needed or even feasible, such as directions for standardized testing or for writing term papers, televised instructions provide identical information to all viewing groups. Interpretation, which varies so noticeably with different emphasis and inflection, can be uniform for all viewing groups. The use of television to achieve conformity when desirable does not negate the value of variety of approach and individual interpretation in other instances.

3. *Economy of Time.* The specialists on a school staff can distribute their services more efficiently by television. A librarian can give specialized instructions to multiple groups simultaneously and thus do in one period what would ordinarily take three or four periods of her time. One teacher in a team of teachers can take responsibility for areas of his special competence and so leave others free to work at other tasks.

4. *Sharing of Experiences.* The activity of one group can be observed by as many groups as are tuned in. A good report heard by only thirty pupils can now be shared by hundreds without the negative features of a large group. For instance, when students in the 2 English-Speech classes interviewed Ralph Moody, author of *Little Britches,* all English classes meeting that period could tune in to the interview.

5. *Dramatic Presentation of Material.* The ability of the camera to focus attention on the point of emphasis, the heightening dramatic effectiveness of concentrating attention on one area, and the impact of close-ups serve to add intensity to the presentation of many types of material.

6. *Better Planned Lessons.* Although not inherent in televised instruction, it is a practical result of the requirements of the medium that lessons are more carefully planned and activities more critically analyzed as to purpose, content, effective sequence, and manner of presentation. Equally careful attention should be given the non-televised instruction, but actually in too many instances regular instruction is not so carefully planned.

7. *Visibility.* The television camera gives every student a front row seat for a demonstration and the direct eye contact of his teacher, regardless of where he is seated. The camera and television receiver can thus be used by the teacher as a magnifying device. Details of a sewing machine stitch can be blown up to twenty-one inches for a home economics demonstration. A typing keyboard is easily seen. Sections of the grasshopper are more readily identified by the student of science when the teacher performing the dissection has the use of the television camera to enlarge the sections to twenty-one inches.

8. *Less Repetition.* Instead of teaching the same lesson four or five times, with varying effectiveness because of omissions and additions, one "best" presentation can be presented simultaneously to all groups. It is reasonable to assume that lessening the drag on the energy of the teacher would enable him to achieve a more vital, dynamic, and

enthusiastic presentation. In those instances where television can conserve the energies of the teacher for the essentials of the learning situation or for other professional activities, it has something worth while to contribute to better utilization of our professional staff.

9. *Student Independence.* Without the constant glance of teacher approval or disapproval, without the restraining presence of the teacher, students are placed on their own more than in a regular classroom and they have opportunities to learn to assume more responsibility for their own activity. Questions are more difficult to ask; therefore, it behooves the student to attend closely to explanations rather than to ask for numerous repetitions. Television does not eliminate the need for teacher supervision and guidance; it does, however, swing the balance of responsibility a little more toward the student than in the regular classroom. The learning climate established in previous classes, the atmosphere of the school as a whole, the nature of the activities in a particular class, the maturity of the students—all affect the amount of self-direction with which students can profitably be entrusted.

10. *Non-professional Personnel.* There are courses, such as typing, and situations within courses, such as showing films, in which some of the supervision and guidance can be satisfactorily carried on by non-professional personnel. The help of such people is more valuable for the more specific and easily defined and observed activities.

11. *Evaluation Techniques.* On-going activities can be interpreted and criticized without interrupting them. Student speeches can be evaluated in the viewing room during the process of delivery. However, the speaker himself needs to participate in a critical evaluation of his presentation. Teachers and students viewing kinescopes made from the television presentation can evaluate their own actions more directly, more specifically, and more effectively. The moving picture camera can provide this same type of self-evaluation, but so far the cost and the delay before prints are available for use have made it impractical.

Next Steps

The school has no definitive answers, of course, to the four basic questions asked at the beginning of our project. Its experiences lead the staff to believe that, in aspects of the school program where desirable conditions are like those which we have called "plus factors" just above, the use of television will enable the school to use teacher time more effectively, or to capitalize upon the special competencies of teachers, or to improve instruction, or, in some instances, to do all of these. These areas may be courses, or specific activities within courses, or specific activities not usually considered as instructional. Conversely, wherever there are conditions like those called "difficulties" just above, either the use of television must be limited or new methods devised for avoiding whatever the limitations it may impose.

The school's interest in instructional television has increased rather than decreased since it first began its project. Consequently, it has been examining its program for additional areas in which television can be of service. It has seemed wise to look for places in the school program where its use has positive advantages, where conditions permit the operation of the "plus factors" mentioned above, and with the idea of searching further and critically for specific kinds of activities in which television improves instruction. Moreover, it was still important to look for areas where there were available teachers interested in experimentation with the instrument. Still another area has been that of general education or wherever numbers of students were large. Several plans for extended use have already been worked out.

The school was well enough satisfied with the use of television in beginning typing to continue this kind of instruction for the next school year. However, it hopes to try, at some future time, setting up a class of selected students in a receiving room without any regularly assigned teacher or teacher aide. Some students might profit more from a learning situation which draws more on their independence.

The school is also planning to use television in the ninth-grade Speech Arts course. Four classes of the course will meet during each of two periods, each class with a fully qualified speech teacher. Each of the teachers will act as a specialist in some phase of the course, perhaps stagecraft, discussion or interpretive reading. He will be primarily responsible for planning, but with the other two teachers, the unit or learning experiences within units in his special area. Students will have the benefit of his special competencies in instruction. There will be many activities which can be better carried on by television or in the large group; they will be televised. Those which cannot or which require a great deal of class time will be set in the smaller class groups of about twenty-five students, where there will be help in the learning process. This course structure is expected to give teachers additional needed time for professional activities which are not carried on in front of a class. Moreover, it will help to draw upon the abilities of three staff members new to the school by orienting them more easily to the program.

In the current year, another teacher will use television for the common instruction of four ninth-grade general science classes during one period. Each of these classes will also have a qualified teacher to help students with work better carried on individually or in smaller groups. Still, for many aspects of the course, such as presenting demonstrations, televised instruction ought to be superior. The division of labor for planning should allow teachers to use their time more effectively.

The school also expects to use television for some very specific purposes: to show films, to administer standardized tests, to allow students to see demonstrations in science and home economics more clearly, to enable many students to hear a speaker at the same time, to interpret some on-going activity without interrupting it, and to save

teacher time in presenting some common explanations or directions such as finding sources of information in the library or filling out routine school information forms.

There seem to be possibilities in using television to allow cadet teachers, who are present in the school in large numbers, to watch and discuss actual classes in operation before they themselves teach. If proper facilities and permissions can be arranged, television may be used for in-service training of teachers, too; a group of counselors, for example, want to watch group counseling sessions with a set of special students. Parents, too, may watch a televised class session without being present in a classroom.

Kinescopes offer possibilities for preserving and using again some outstanding class session. They might also preserve time-consuming or complicated administration of tests. Kinescopes might record crucial explanations of fundamental methods of attacking problems in, for example, mathematics, social studies, or science, for slower students or those absent to use in review. Kinescopes of special demonstrations, particularly of fragile or expensive materials, are also possibilities.

Our experiences with closed-circuit television have also stimulated interest in the use of other audio-visual aids and in setting up teaching teams. Two teachers will instruct their much larger than normal classes of physics by using a course of films. Presentations should be expertly planned; demonstrations with expensive equipment should be easily seen; teachers can give more time to working with individuals in and out of the laboratory. Four teachers, with the help of a specialist in reading and many kinds of audio-visual aids, are trying cooperative planning and instruction for four twelfth-grade English classes during one class period. They expect to use their own time more efficiently, to improve the effectiveness of presentations, to make their special competencies available to more students, and to offer special instruction in areas of individual students' own weaknesses. Such complex activities as learning to analyze can still be carried on in the usual sized class groups. A similar, although less extensive, plan has been made for slow learners in ninth-grade civics. Audio-visual aids of all kinds ought to provide the more nearly direct experiences which these students need and help them to focus their attention on what is essential.

Both the school's own staff members and the consultants with whom they talked found the potentialities of instructional television interesting enough to raise a host of questions for the school to consider. A good deal of time was spent in discussing potentialities with Dr. William Brink, Dr. Thomas Hastings, and Dr. Richard Hull, and additional time with other consultants. Some of the questions are included here in the hope that they will be helpful to others in their explorations of this new medium.

1. The use of television focuses attention on the different kinds of learning experiences needed for a variety of learning outcomes. What

types of learning activities are actually needed in any one course? In which of these can television be used profitably?

2. The present, conventional structure of courses is that of one teacher meeting with somewhat more or less than thirty students for the same period five days a week. What other structures could be worked out to capitalize upon the opportunities in instructional television?

3. Just what qualifications, experience, and training should teacher aides have? How do courses differ in their requirements for teacher aides?

4. To what extent does teaching over television influence a teacher's satisfaction in teaching over a period of time?

5. In what situations does a teacher instructing over television need a class in the room where he is teaching and in what situations can he teach from a studio?

6. Television teaching seems to be a team operation. What differences in responsibilities and competencies are needed and practical in the teaching teams for particular courses?

7. Specifically, what is good attention or good discipline in a receiving room? How large or small should a receiving room group be? What kinds of supervision are necessary?

8. To what extent does presenting material over television encourage greater self-reliance in learning? What kinds of students are most able to take advantage of television's potentialities in this area? How can instructional television encourage independence in learning?

9. We teach students how to use other instructional materials. Just what should we teach students about how to learn from instructional television?

10. By what methods, when we use instructional television, can we build up good interpersonal relations where they are basic to the learning situation?

11. Under what circumstances will it be practical and wise to kinescope the teaching of all or part of a course for repeated use? What uses might be found for such kinescopes: remedial work, help for students who have been absent, regular class instruction?

12. To what extent can instructional television be helpful in building the program of common learnings, general education, in the school?

13. What new methods in evaluation are made possible by television?

Staff members at Evanston Township High School found it stimulating and worth-while to work with instructional television. There is much yet to be learned. What has been done so far has been encouraging. The faculty is looking forward to further exploration of ways whereby this new medium can be a part of a good educational program in its own school and in others.

Part II

The Experimental Studies in Schools

A driver education teacher in the Richwood, West Virginia, High School gives instructions to four students and the bus driver-assistant who will actually give the behind-the-wheel training. (See Chapter V.)

High-school student assistants keep records and give instruction under the direction of the teacher in physical education classes in the Community Unit School at Beecher, Illinois. (See Chapter IX.)

CHAPTER V

Bus Drivers Serve as Teacher Assistants in Driver Education at Richwood, West Virginia, High School

CLARENCE A. BROCK
WALTER H. JARECKE
CHARLES PETER YOST

THE driver education program in the secondary schools of the nation has been recognized as a potent force in the ever growing problem of highway accidents in the United States. With the increase in the number of cars, increase in the power of the car engines, and in the increase in population, the traffic problem tends to become more complex, accidents more numerous, and loss of life and property more staggering.

Although studies involving the effectiveness of driver education have been conducted, the findings of these studies cannot be taken at face value. Experimental controls and statistical techniques have at times been inadequate (4, 351-52). While there are wide variations in the results reported in studies designed to prove the worth of driver education, the over-all picture indicates that high-school students who have completed a course in driver education have substantially better driving records than the students who received no instruction through a driver education course (1, 5-6).

In the past few years, due largely to various economic factors, the schools of the country have not had sufficient teachers to staff their faculties with qualified personnel for the subjects which were taught in the past. Driver education, being a comparatively new subject in the school curriculum, has suffered due to the lack of teachers to present properly the training needed by students.

BACKGROUND AND LOCATION OF THE STUDY

One of the most acute problems in education throughout the United States is that of teacher shortage. This is especially true in West Virginia. Communities such as Richwood, somewhat removed from urban areas and with limited financial resources, find it increasingly difficult to attract and hold teachers.

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There is a belief among some school administrators that, through the use of laboratory assistants to teachers, the program will provide an opportunity for more students to take advantage of driver education without seriously jeopardizing the effectiveness of the course of instruction. These laboratory assistants should not merely do some of the clerical or what would be called non-professional tasks of the teacher; they would also assume responsibility for supervising students who were engaged in try-out or laboratory experiences growing out of classroom teaching and discussion. Laboratory experiences would be suggested and planned with the active participation of the teacher, but the actual supervision of the students would be done by an assistant who would work closely with the teacher. The laboratory assistant must be competent in the area supervised by him, but he does not need to have the same professional training and experiences as the teacher.

The Richwood High School wished to experiment with the laboratory assistant idea. In deciding on the teaching area where relief was most needed and where the teacher-pupil ratio was lowest, the area of driver education came to immediate attention. Here the teacher was spending five periods a day with only four students each period, the lowest teacher-pupil ratio in the whole school program. This, of course, is the same situation that exists in many driver education classes throughout the United States. The school administrator proposed to use a laboratory assistant in the "behind-the-wheel" or laboratory phase of the program, while the teacher would handle all the students in one or two periods of class instruction and thus be free to teach other classes the balance of the school day.

Several factors caused the administration and staff to seek some means of providing assistance to the instructor in the "behind-the-wheel" phase of the program. The instructor, a qualified business education teacher, was needed to teach these subjects, but his full-time occupation with driver education students prevented this. Moreover, after a number of years, the instructor was feeling more and more the tensions that are associated with "behind-the-wheel" teaching. There was also some concern relative to the high per-pupil costs of "behind-the-wheel" instruction since the teacher could work with a maximum of four students per period.

The study carried out in Richwood has national implications. Driver education is now provided in thousands of high schools throughout the United States. These teachers typically spend three fourths or four fifths of their time working with a maximum of four students at a time in the "behind-the-wheel" phase of instruction. If this work could be done effectively by a laboratory assistant, there would be a tremendous saving of money and teacher time in the United States.

With this in mind, the West Virginia Board of Education authorized a special "behind-the-wheel" instructional permit to qualified school bus drivers to serve under the supervision of teachers of driver education.

The Richwood, West Virginia, High School enrolls about 860 students in grades 9-12. The student body is about equally divided between students who live in town and in rural areas. Lumbering and mining are the principal industries of the area. That the school staff and administration are interested in modern education is shown by their activity in the Life-Adjustment education movement and by the fact that they have one of the few full-time guidance workers in West Virginia in schools of this size.

General Purpose of Study

The general purpose of this study was to explore the possibility of training more students effectively in driver education. The specific problem was to ascertain whether students taught by both a regular teacher and a bus driver would receive training in knowledges, skills, and attitudes which was as good or better than that offered by a driver education teacher alone. Other problems with which this study was concerned were:

1. What are the cost comparisons between the two programs?
2. What are the cost comparisons per year of the driver education program in the experimental situation before and during the experiment?
3. What relationships should exist between the teacher and the laboratory assistant?
4. What criteria should be used in the selection of the assistants?
5. What effect does participation in the experiment have upon the assistant and the teacher in relation to their other work, relations with colleagues, and relation with students?
6. What opinions do students, parents, and school administrators hold with respect to the experimental program?

It was agreed by the teacher, the local administration, and the State Department of Education that an effort should be made as objectively as possible to find answers to the proposed questions. Some of the questions could be answered by basic research and others by more subjective means. The problem was presented to the Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools under the direction of Dr. J. Lloyd Trump and they agreed to sponsor the research. Dr. Walter H. Jarecke, Professor of Education and Director of Guidance; and Dr. Charles Peter Yost, Assistant Professor of Physical Education and Supervisor of Safety Education; both of the Staff of West Virginia University, were selected to conduct the study. Clarence A. Brock, State Supervisor of Secondary Schools; Oakford Dietz, County Superintendent of Nicholas County Schools (including the Richwood schools); and D. E. Dean, Principal of Richwood High School, were included on the research team as consultants.

In the experimental school, Richwood High School, Forest Dorsey was the driver education teacher and Chester L. Smithson the bus driver assistant involved in the study. Webster Springs High School, in a neighboring county, was selected as the site for the control group in the

research. C. H. Conway was the principal and Robert Andrick the driver education teacher in this school.

Procedures

The procedure was an experimental study of equated groups. Two high schools located in comparable towns of Richwood and Webster Springs were chosen. Table I shows the comparable size of both communities and both schools, the size of classes enrolled, the experience of the teachers participating, and the salaries of the participating teachers. The distance between these schools is 37 miles.

Steps were taken to make the two groups of students as comparable as possible. The two participating groups were equated as to mental ability, personality adjustment, driver knowledge, and driver attitude. To keep the training as equal as possible for both groups, class procedures, materials and training were defined, used, and followed in both groups. These procedures are indicated in Table II.

There were several purposes for the use of the objective measures selected. The *first* purpose was to equate the two groups of students who participated in the experiment. The *second* purpose was to ascertain the status of the group in their knowledge and proficiency in the field of driver education. The *third* purpose was to evaluate the progress which the students made in each group and to measure the efficiency of teaching under two systems: (1) that of using only certificated teachers, and (2) the system of using a bus driver as an assistant to supervise pupils who were obtaining their driving lessons under actual road conditions.

TABLE I. Data About the Participating Schools

	Webster Springs H.S.	*Richwood H.S.*
Town Population	1,313	5,321
County Population	17,888	27,696
No. of H.S. in County	2	2
Enrollment—Grades 9-12	496	844
Driver Education:		
Enrollment	25	50
No. of Teachers	1	1
Teacher Experience in:		
Driver Education (years)	5	9
Total Teaching (years)	11	10
Teacher Salaries	$406 per mo.	$436 per mo.
Laboratory Assistant		$135 per mo.

The two groups were equated by using the following objective measures: (1) the *Primary Mental Abilities Test, Intermediate Form* measured intelligence; (2) the *Bell Adjustment Inventory, Student Form* measured personality adjustment of the group and also the individual students; (3) the *New York University Knowledge Test for Automobile*

TABLE II. Class Procedures and Materials

	Walter Springs H.S. Control group	*Richwood H.S. Experimental group*
1. Hours per week of classroom instruction	5 hrs.	5 hrs.
2. Total hours of classroom work	70 to 72	85 to 90
3. Total hours of "behind-the-wheel" instruction	6 to 10	6 to 10
4. Total hours of observation in driving situation	18 to 20	18 to 20
5. Number of students in car while driving instruction is in progress	Ave. 3	Ave. 3
Equipment in class	Telebinocular Test	Telebinocular Test
Car Equipment	Standard gear, dual control car	Standard gear, dual control car
Course of Study	*Course of Study in Driver Education for W.Va. Schools*	*Course of Study in Driver Education for W.Va. Schools*

Resource books, workbooks, and films were same in both classes:

1. Halsey, Maxwell, *Let's Drive Right*, New York: Scott Foresman Company, 1954.
2. Center for Safety Education, New York University, *Man and the Motorcar*, New York: Prentice-Hall, Inc., 1955.
3. American Automobile Association, *Sportsmanlike Driving*, Washington 6, D.C.: American Auto Association, 1955.

Workbooks for *Sportsmanlike Driving* and for *Man and the Motorcar*

Films:

And Then There Were Four
A Day in Court
Driving on the Highway
Driving in the City
Parking the Car
Driving Under Adverse Conditions
Driving at Night
Care of the Car

Drivers measured pre-knowledge of driving procedures; (4) the *Driver Reaction Inventory* measured attitudes toward driving; and the *Primary Mental Abilities Test* and the *Bell Adjustment Inventory* were used only to equate the groups. The *Knowledge Test for Automobile Drivers* and the *Driver Reaction Inventory* were also used to determine the beginning status of the groups.

During the third or the evaluative phase of the research, the following measures were used: (1) A retest of the *Knowledge for Automobile Drivers*, (2) the *Driver Reaction Inventory* to measure growth in proper attitudes, and (3) a standard checklist utilized by the officers giving the final driver-skill test. This checklist covered all phases of the "behind-the-wheel" phase of the evaluation. The checklist was an attempt to establish the degree of efficiency of students who passed or failed the driver-skill test and was formulated, applied (experimented with), and revised for study use through the combined efforts of two college instructors who taught teacher preparation courses in driver education,

two high-school instructors of driver education, three selected members of the West Virginia state police, the superintendent of the West Virginia state police, and the assistant state supervisor of administration of the West Virginia State Department of Education.

The group objective measures were administered by one administrator, Dr. Walter H. Jarecke, Director of Guidance, West Virginia University. The final driver-skill examinations were administered by two selected West Virginia state policemen. Both policemen understood the necessity for standardization during the evaluative part of the study. This part of the study was under the direction of Dr. Charles Peter Yost, Supervisor of Safety Education, West Virginia University.

For the entire semester, the students at Webster Springs were taught exclusively by the driver education instructor, while at Richwood the students were taught by both the driver education instructor and his assistant (bus driver). Near the end of the semester, after the students took their driver-skill test administered by the same two state policemen in both schools, the objective tests were again administered.

Criteria for the selection of assistants to the driver education teacher were carefully planned. The first step in this development was to poll the 55 West Virginia county superintendents to get their opinions and advice. They were asked to give their opinion as to the feasibility of the plan and to make suggestions concerning the regulatory conditions needed to control the selection of school bus driver assistants in driver education. The answers were summarized, a set of regulations drawn up in the State Department of Education, and presented to the West Virginia State Board of Education. The regulations, adopted by this Board on May 26, 1955, authorized the issuance of "behind-the-wheel" instructional permits to qualified school bus drivers to serve under the instruction of teachers of driver education. The permit may be issued to bus drivers who have complied with the following requirements:

1. Has attained high-school graduation or a high-school equivalent diploma based on the *General Educational Development Test.*
2. Has completed a college course in driver education, which may consist of a regular course or summer workshop conducted by an approved college.
3. Passes a test prepared by the State Department of Education and the State Department of Public Safety.
4. Has the recommendation of the county superintendent by whose board the applicant is employed. The recommendation is to be based on the following characteristics of the applicant: (1) reliability, (2) moral character, (3) dependability, (4) cooperativeness, and (5) skill in the control of young people.

The effect of the experiment on the driver education teacher in connection with his other work and in relation to his colleagues, and the opinion of the school administrators, the parents, and the students in respect to the use of a school bus driver as a laboratory assistant in driver education were ascertained by interviews during and at the close of the experiment.

The co-ordination plan between the teacher and the assistant was examined by interviewing both of the men involved.

The cost of the program in the experimental program was compared to the control group by calculating per-pupil-per-day costs. The same procedure was reduced to pupil cost in relation to success on the skills test as administered by the Department of Public Safety.

What the Two Groups Learned

The first problem was to equate the groups. Table III shows the means, standard deviations, and the ratio comparisons of the measures used to equate the groups. The first measure used was the *Primary Mental Abilities Intelligence Test.* While there seemed to be a discrepancy between the means and standard deviations of the scores of both groups, the t ratio comparison indicated that there was no significant difference at the one per cent level. It should be stated here that in each case the total raw scores were used.

TABLE III. Comparison of the Two High-School Groups

	Richwood H.S.	*Comparison of Difference of the Means*	*Webster Springs H.S.*
Primary Mental Abilities Test	M 154.114 SD 32.643	t 1.29 19/100	M 140.052 SD 46.93
Bell Adjustment Inventory	M 40.857 SD 17.72	t .27 99/100	M 39.72 SD 14.898
Driver Knowledge Pre Test	M 33.828 SD 5.141	t 2.39 .8/1000	M 36.88 SD 3.615
Driver Reaction Pre Test	M 134.00 SD 15.497	t 1.60 1548/10,000	M 139.87 SD 12.71

The second measure used to equate the groups was the *Bell Adjustment Inventory, Student Form.* While there was a range from very well adjusted to poorly adjusted students, the scores were not low enough to suggest the necessity of eliminating any students. The mean score t ratio comparison showed no significant difference between the means.

The third objective test measured the level of knowledge of the student about driving. While the arithmetical difference in the means was not great, the t ratio showed that the mean of the Webster Springs group was higher. The difference was significant at the one per cent level.

The fourth measure used was the *Driver Reaction Test.* The t ratio indicated no significant difference between the groups.

Table IV shows the means, standard deviations, and the t ratio comparisons of the *Pre* and *Post* tests measuring driver knowledge and driver reaction.

TABLE IV. Comparison of the Two High-School Groups

	Richwood H.S.	*Comparison of Difference of the Mean*	*Webster Springs H.S.*
Driver Knowledge Pre Test	M 33.828 SD 5.141	t 2.39 .8/1000	M 36.88 SD 3.615
Driver Knowledge Post Test	M 38.657 SD 4.869	t 1.60 1548/10,000	M 40.44 SD 3.785
Driver Reaction Pre Test	M 134.00 SD 15.497	t 1.60 1548/10,000	M 139.87 SD 12.71
Driver Reaction Post Test	M 132.085 SD 19.073	t 2.989 14/10,000	M 143.56 SD 13.23

A comparison of the *Driver Knowledge Tests* shows that, while the Webster Springs group had a significantly higher mean at the beginning of the course, there was no difference between the means at the end of the course. Both groups were equal in achievement as measured by the *Driver Knowledge Test.*

When the means of the *Driver Reaction Test* were compared, there was no significant difference between the means at the beginning of the course. At the end of the course, the Webster Springs group showed a higher mean. The difference in the means was significant at the one per cent level.

Table V shows a comparison of the means of the *Pre* and *Post* tests of the Richwood High School group and of the Webster Springs High School group. The Richwood group gained in driver education knowledge as measured by the *Driver Knowledge Test.* The difference in the means was significant at the one per cent level.

TABLE V. Comparison of Objective Evaluation Within the Groups

	Richwood H.S.	*Webster Springs H.S.*
Driver Knowledge Pre Test	M 33.828 SD 5.141 t-4.04 3/100,000	M 36.88 SD 3.615 t-3.42 3/10,000
Driver Knowledge Post Test	M 38.657 SD 4.869	M 40.44 SD 3.785
Driver Reaction Pre Test	M 134.00 SD 15.497 t-.46 32/100	M 139.87 SD 12.71 t-1.01 16/100
Driver Reaction Post Test	M 132.085 SD 19.073	M 143.56 SD 13.23

In the evaluation of driver attitude as measured by the *Driver Reaction Inventory*, the Richwood Group dropped almost two points, but the drop was not statistically significant. The Webster Springs group gained almost four points; however, this raise was not significant either.

The last comparison was made when the students were given the driver-skill test by two members of the West Virginia state police. During the May evaluation of the driving test, forty-six Richwood students passed and four failed. In the Webster Springs group, fifteen passed and ten failed.

Comparison of Costs

In Richwood High School, the laboratory assistant was paid $135 per month ($1,215 per year) for the five hours per day devoted to driver education. The regular driver education teacher used two hours each day in driver education class work and four periods in the teaching of business education classes. Since his salary was $436 per month ($3,924 per year), there was a reduction in teaching costs. One-third of $3,924 (teacher's salary), or $1,308, plus $1,215 (assistant's salary), or $2,523, were expended for the instruction under the new plan. In the previous years the teacher's total time was devoted to a classroom and "behind-the-wheel" instruction in driver education. Since approximately the same number of students were enrolled now as before, the saving in money was $3,924 (teacher's salary) less $2,523 (part-teacher's plus assistant's salary) or $1,401. A comparison of costs in the two schools participating in the experiment is shown in Table VI.

TABLE VI. Comparison of Costs in Two Schools

	Experimental	*Control*
Salary of teacher (per month)	$436.00	$406.00
Salary of teacher (per day)	21.80	20.30
Salary of teacher (devoted to driver education)	7.67	6.76
Salary of assistant (per day)	6.75	*
Total instituting salary for driver education	14.42	6.76
Number of pupils in driver education	50	25
Per pupil cost	.28	.27
Number of pupils passing test	46	15
Per pupil cost for pupils passing skills test	51.5	67.6

*Teacher of control group assigned two periods per day for both classroom and "behind-the-wheel" teaching.

Opinions of Participants

Interviews with the driver education teacher, bus driver, principal, other teachers, parents, and students revealed the following general attitudes:

QUESTION—"What did you think of the program as conducted this year with the bus driver assistant in driver education?"

TEACHER'S RESPONSE—"Very fine. I could no longer carry the total load by myself. I was going to request a transfer to business education teaching if something had not been done."

PRINCIPAL'S RESPONSE—"The best program we have ever had. Everyone was satisfied. We had no bus driver-student or bus driver-parent friction reported to me in connection with Mr. Smithson's (the bus driver assistant in driver education) regular bus driving duties. He did a great deal in improving the bus driver-teacher relations in our school."

OTHER TEACHERS' RESPONSE (typical)—"It seems to be a better and fairer distribution of teaching load."

QUESTION TO TEACHER AND BUS DRIVER—"Do you think you worked close enough to get the best results possible between the classroom work and the "behind-the-wheel" phase?"

ANSWER—"Yes, we had many conferences and we both understood what each of us was doing."

QUESTION—"Could you have had better coordination of the two phases?"

ANSWER—"Yes, if we had more time or if we had taken more time."

Parents and students contacted indicated that they favored the new program and wanted it extended to every eligible student. There were no unfavorable comments by parents or students.

CONCLUSIONS

1. The objective data indicate that the experimental group gained more than the control group in skills. This was indicated by the driver-skill test administered by the State Department of Public Safety.

2. The gain in knowledge as measured by the *Driver Knowledge Test* showed no difference between the two groups.

3. The *Driver Reaction Inventory* indicates that the control group made a significantly greater gain in driver attitudes than the experimental group.

4. (a) The cost comparison per pupil enrolled was one per cent more per day for the experimental group. However, the number of pupils trained in the experimental group was twice that of the control group. If both teachers were paid the same salary, the cost per pupil would be the same.

(b) The cost per pupil per day was less for the experimental group than for the control group when the success of the groups was compared in the driver-skill tests as administered by the Department of Public Safety.

5. The cost of the program with the assistant was $1,401 less to train more students than the previous year under a full-time driver education teacher.

6. (a) The use of an assistant permitted the driver education teacher to teach classes in his other field of certification, which was business education.

(b) The study revealed to the school administrator that the assistant-teacher and assistant-student relationship was very satisfactory in respect to the objectives of the program.

7. Responses of students and parents to questions concerning the use of bus drivers as assistants in the driver education program revealed that they endorsed the program and desired its continuance.

8. The criteria used for the selection of the assistant was satisfactory for the purposes of this study.

Implications

1. The difference in the driver attitude between the two groups indicates that a close cooperation between the assistant and driver education teacher must be maintained at all times. The division of responsibility between the instructor and his assistant points to a loss of coordinated emphasis on stressing driver attitude.

2. It is possible to secure a more qualified bus driver because of better remuneration and added prestige.

3. The use of the lab assistant in the driver education program can free the regular driver education instructor for other teaching assignments, thus helping to relieve the teacher shortage problem.

4. The participation of a bus driver as an assistant in the driver education program allowed the teachers, students, and bus drivers to appreciate more fully their mutual problems.

5. The administrative problems of student schedules can be lessened with the use of a laboratory assistant.

6. More students can take advantage of the driver education course.

The bus driver-assistant gives instructions to one of the students in the Richwood, West Virginia, High School.

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CHAPTER VI

Subject Matter, Students, Teachers, Methods of Teaching, and Space Are Redeployed in the Newton, Massachusetts, High School

FLOYD RINKER

THOUGH many citizens questioned the expediency of the venture, the school committee voted to embark on "an experiment which we will continue to watch anxiously yet hopefully, leaving the results to speak for themselves." The year was 1859, and the school committee action established "a pure high school" in Newtonville, most central of Newton's scattered villages.

The new school had two teachers on its staff, an enrollment of seventy-five students, and one small building which provided generous space for immediate needs and school growth. Nearly a century later, several large buildings provide a minimum of room. The "pure high school" has become a comprehensive high school, with an enrollment approaching 3,000 and a staff of over 140.

During these first ninety-six years, no changes in the school's policies, administration, and techniques seemed quite so revolutionary as proposals made by a group of teachers in the autumn of 1955 and first announced the following spring. There were pupils, teachers, and parents who questioned the expediency of this newest venture. "Is there anything wrong with the present program?" "Won't the pupils fare less well in this new set-up?" "Aren't the teachers going to be unhappy?" And there were many pupils who wanted a school experience just like their older friends and their brothers and sisters had. Nevertheless, after considering all these questions carefully, the school committee approved the teachers' proposals and has supported their work. Undoubtedly, they "watch anxiously yet hopefully," as did the school committee members of another age, "leaving the results to speak for themselves."

TEN QUESTIONS

Teachers and administrators worked out of their own experience. They studied what was happening in other schools and in colleges and universities. They reviewed the past, weighing theories and techniques that had been discarded or outworn; here might be a place to find sound

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help with present problems. They summarized their thinking in questions. Of several hundred listed, these ten are possibly the most pertinent:

1. Must excellent teachers continue to leave the classroom for school administration or for other employment, either because the salary would be larger or because the classroom position offered no prospect of continued growth?
2. Will community recognition of great teaching, and its financial rewards, be an incentive to all true teachers, and possibly a source of motivation for those who have lost the spark?
3. Are there ways to redeploy the present teaching staff, so that each individual takes on a task for which he is best fitted?
4. Ought not a school devise ways to use certain of its experienced teachers in training the young and inexperienced members of its staff?
5. How does a school define, require, and provide an education superior to what now purports to be worthy of a diploma?
6. Is the semester course the least divisible unit in packaging subject matter?
7. Can a secondary school adapt the lecture-seminar plan of the university to improve the educational opportunities offered boys and girls?
8. Must classes be fixed at a uniform size—twenty-eight to thirty in Newton—or should the kind of classroom activity determine the number of students and teachers engaged?
9. How can a school rearrange its space to provide for class activities in groups ranging from two persons to several hundred?
10. Must the time allotted to secondary-school education be limited to the standard school day and school year?

To find answers to these questions and others and to demonstrate the teachers' proposed solutions, Newton Plan Studies was organized in Newton High School.

Support for the Program

The School and College Study of Admission with Advanced Standing had given an impetus to teacher thinking and planning in the school: "If there is a better way to do our job, let's find it." Another impetus was given by Newton High School's impending centenary: "The sensible way to commemorate a centenary is to anticipate the needs of a second century." Financial support—to provide for conferences, research, preparation of materials, and experimentation—has been given by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. The Newton School Committee has supported the program with clerical and secretarial assistance, the freeing of regular personnel for in-school time as needed, purchase of all essential equipment and supplies, and building alterations to create more flexible teaching space.

The School and University Program for Research and Development (SUPRAD), guided by the Graduate School of Education, Harvard University, under a grant from the Fund for the Advancement of Education, has made possible for 1957-1958 an extension of Newton Plan Studies. Furthermore, it has made available the Graduate School's services in

evaluating Newton's changes in staff utilization and instruction techniques.

The Commission, SUPRAD, the School Committee, and the school staff believe that the Newton Plan may find some answers to the shortage of teachers and to teacher training, attitudes, and salary. They are agreed, however, that the main purposes are improvement in the quality of instruction and increase in the educational opportunities for students in the school.

THE FIRST-YEAR RUN

The Newton Plan had its genesis in the department of English. During the spring of 1956, teachers selected to get the program underway presented their proposals for large-group classes and demonstrated to their colleagues the techniques to be used. Part of the summer vacation was spent in preparing a first series of lectures to be given during the year 1956-57.

Selected for the first year was subject matter believed suitable for teaching by new methods and in a setting from the conventional classroom. Essential skills and common learnings were favored, so that experiments might be made in cross-curricula and cross-year assignments. Newton Plan English classes varied in size from 60 to 425, according to subject-matter and the lecturer's preference. Each large-group lecture was offered six times, to cover the six blocks in the school's rotating block system. The number of lectures in each unit ranged from one to four. The estimated total number of student hours spent in lecture classes was 37,700. The subject matter was as follows:

Grade X English
- Verbs and prepositional phrases
- Introduction to descriptive linguistics
- Dictionary: its use as a tool

Grades X and XI English
- Punctuation: a review of basic rules
- Spelling: a review of basic rules
- Symbols of Correction: an explanation; an encouragement to revise and rewrite

Grade XI English
- Letter Writing: business and social
- Composition: writing tight, effective paragraphs
- Vocabulary: accuracy, variety, and growth
- Literature: an interest in books

Grades XI and XII English
- Library and research paper
- Idiom and language craft
- Literature: reading great novels

Grade XII English
- Structure of poetry

Grade X, XI, and XII English
- Techniques for the Student: summary on studying in general, study habits, and reading techniques

Scheduling classes in the auditorium (seating 1,200), speech hall (120), and two large recitation rooms required care. Students and teachers had to be informed long in advance of Newton Plan classes, and the work done in Newton Plan had to be coordinated with the regular classroom teachers' lesson plans. Distribution of supplementary materials, attendance, supervision, related home assignments, and testing were considered routine and done. The large-group classes did free an appreciable amount of teacher time, thus providing the classroom teachers time for conference, paper correction, and lesson preparation.

Little use was made of films and filmstrips. Tape recorders and record players were aids in a few instances. For the most part, the lectures used the slide projector, for which hundreds of 35-mm. slides were made, and the overhead projector (VU-GRAPH). With the help of a teacher of art, free half-time for this program, the teachers made more than 500 transparencies—charts, diagrams, illustrations, exercises, and textual matter. Many of them were enhanced by color, and three to six overlays were not uncommon.

Newton Plan Speech

The classes in English demonstrated what can be done in large classes when teachers are given time to think, undertake a maximum of research, prepare their lesson plans and teaching materials. At the same time, teachers of speech in Grade X English broke with traditional class size and method. Exposition and demonstration were done in large classes, numbering from 90 to 225. Practice and recitation, and the teacher-class criticism, were done in small classes of eight to twelve. These changes saved time for the students, and time and energy for the teachers; moreover, both escaped the boredom of seemingly endless repetition.

Planning a Second Year

Some evaluation of Newton Plan was carried out during the year. Students and teachers, asked to give their opinions, praised with reservations. A majority were interested in what was happening; some were frankly skeptical; a few made loud protest at the changes. Testing and testimony clearly indicated that the program should continue and that it must test other procedures and extend to other departments.

In English classes, there had been, over a school year, rearrangement of the roles of teacher and pupil, and some altering of subject matter. From the City of Newton came assurance of rearrangement of space in Newton High School, a step likely to have great implications for a second high school about to be built.

Proposal for a House Plan

The proposal to reorganize the student body of Newton High School into five houses each with a population of 600, was approved in principle.

Identity over a three-year period with a smaller, closely knit group would, it was believed, provide the pupil with social and academic values sometimes lost in the large school. However, though the present form of school government and class membership would have remained unchanged, a majority of students and teachers were not ready for a move they considered too revolutionary. "Not this year," said the juniors in the school; "Wait until we have graduated." "If this plan goes into effect, I'll plan to retire now," said one teacher, long in service and possibly speaking for others of his generation.

A first step has been made. For home rooms this year, seniors share buildings formerly identified with sophomores and juniors, and part of the sophomore class has been housed in areas traditionally reserved for the graduating class. No time-schedule has been set for house reorganization; but when it is effected, in-coming boys and girls from five junior high schools should enjoy an easier orientation and more active participation in school life; upperclassmen will have more opportunities in leadership and in responsibility for house citizenship, extra curricular activities, and scholarship. Some changes in staff roles would be required, more closely knitting the teaching staff and the administration of the school.

Summer Workshop

Teachers of English, French, social studies, mathematics, and business attended a workshop in staff utilization for five weeks, August 1-September 5. Research, preparation of teaching materials, and improvement of techniques were the total program. A daily staff meeting each morning at 8:30 provided an opportunity for exchange of ideas and testing of proposed procedures. The remainder of the day was given to individual and group activity, interrupted only by the noise and dust of plumbers, carpenters, painters, furniture movers, and other workmen carrying out the first stage of space reorganization.

Teachers were paid for their participation in this workshop, and this extension of the teacher's year may have been the first important step toward rearrangement of salaries. The customary length of the school year had been altered.

Apart from work, trying conditions, and compensation, there were also social benefits. It was an inter-departmental group, pledged to improved instruction for the whole school. Each day's lunch hour gave an idyllic aspect to the whole summer's work. The task of providing a picnic lunch was rotated among the workshop members, who vied in serving Lucullan feasts in a nearby park.

An all-day seminar gave guests from the Newton Public Schools and other schools and colleges a report of what had been done and what was to come in Newton Plan Studies. Technifax Corporation set up a laboratory to demonstrate production of teaching materials on its equipment, which had been used by Newton Plan during the previous year.

Teaching in a New Setting

The high-school library, long housed in a converted auditorium on a third floor, has been moved to a more central location on the ground floor. With other changes in the uses of space, the library need no longer be used as a study hall. New equipment, improved lighting, and rearrangement of sources have improved the library's efficiency and value.

The vacated area has been converted to provide a classroom seating 225 for Newton Plan lectures and testing, as well as an office and workshop. In the first week of the present school year, a great economy of teacher time was effected when department tests were administred in this Newton Plan Room, rather than in the regular classrooms.

The Sophomore and His English Staff

The program in English for sophomores has been thoroughly reshaped. This can be called an experiment only in the sense that organization of content, techniques of presentation, and, to a certain extent, the nature of content itself are new. Traditions in the teaching of English have been preserved if they continue to have proved value. Techniques aimed at conserving pupil and teacher time and effort have been worked out. This course, it is hoped, can give students both the responsibility for learning and the techniques that will enable them to accept that responsibility. To teachers, the course provides more freedom to plan creatively for the varying abilities of their students.

The aims are twofold: to provide better instruction; and to test the validity of the premise that the experienced teacher who has the unique talent, interest, and energy both for revaluation and reconstruction can, given the proper time and equipment, effect a revolutionary change in teaching methods. Will this change inspire in the student—whether poor, mediocre, or good—an interest in learning and an understanding of subject matter which surpasses that gained through the routine made of teaching twenty-eight to thirty-two pupils in an ordinary classroom? Will the work of teachers selected for this new assignment be a stimulus to more experimentation and creativity among those who teach small classes? Will beginning teachers gain inspiration and invaluable experience by working with the teacher-lecturers? Will scholastic results be better when every pupil is exposed to top-flight instruction? These and other questions may be answered during this school year and the next. The experience of receiving instruction in English from the regular classroom teacher, a teacher of speech, and three teacher-lecturers is an innovation in Newton.

English for Upperclassmen

Work already done clearly indicates that changes in emphasis and techniques can provide better instruction in less time. When a premium is placed on the individual teacher's special skills and aptitudes, his work has been of more interest to him and of more value to the school.

The teacher's knowledge and his transmissible skills are used, and his success, not only spurs on his colleagues, but also challenges him to greater success. Newton Plan teachers, beginners and veterans of one year, have correlated with the traditional course of study in Grade XI and XII English the following series:

Grade XI English

Vocabulary and language craft: usage, unity, coherence; passages from literature as samples of correct and effective use of language.
Research: use of source materials
Exposition: emphasis on the art of writing
Letter writing: business, social
Literature: inspiration and direction for outside reading, an approach through theme
Poetry: form, experience
Summation: principles of grammar and rhetoric, self-expression, standards of criticism

Grade XII English

Literature: jointly with Grade XI
Poetry: developing a sense for quality in verse
Description: sensitivity, ability to create images
Anglo-Saxon language and literature

Contract Correcting

To test the effectiveness of contract correction of written work in English, Newton sought the help of the School and University Program for Research and Development. For two weeks during the summer, nineteen ladies from Newton and neighboring communities attended a workshop in reading and grading the written composition. Selected from nearly seventy applicants, they understood that a maximum of six would be chosen for the year's work, but that each person completing the course would receive an equal honorarium. The instructor, from the staff of the Harvard Graduate School of Education, was assisted by a Newton High School teacher of English who is also a reader of the achievement test of the College Entrance Examination Board.

To each of the six readers chosen, the Harvard-Newton Committee for Contract Correcting offered, for the current school year, 200 hours of work—160 to be spent on actual theme correcting and 40 to be spent in conferences with teachers and students.

All workshop members seemed well qualified for the work. Factors important to the experimental nature of the undertaking were the basis for final selection. In addition to the six readers chosen for work at the high school, two were employed by Newton Junior College. The others were happy to have gained training of value in journalism, advertising, or para-professional work.

An elaborate schedule has been programmed to favor the success and to test the validity of contract correcting. Teachers and classes involved are matched with other teachers and classes of the same year and

curriculum that will serve as control groups. In addition to pre-testing and end-of-year testing, uniform written assignments will be spotted throughout the year. And each teacher who works with a reader will teach a comparable class without a reader; in one instance, a teacher with three comparable classes will read all the papers written by one class, half of those written by the second class, and very few of those written by the third class.

Modern Language on Lp's

SUPRAD has freed two Newton teachers part-time for research and the preparation of materials for better instruction in modern foreign languages. The primary aim is to demonstrate the use of phonograph records as an adjunct to textbooks for homework assignments in oral work.

Ten-inch long-playing records in beginning French are planned for the initial try. They will be used in close correlation with the textbook used in class and for home study. In time, the instructor—chosen for his voice and accurate accent, as well as his scholarship and enthusiasm—hopes to have a set of eighteen or twenty records for each pupil of beginning French, or one side a week for out-of-school preparation. "This seems to be," one colleague observed," a bid for time that has belonged to Presley and Boone."

Success in this venture presumably would make it possible to extend the practice to beginners in German and Spanish. Study of ways to establish an effective language laboratory, to allow the public school language teacher time for intensive oral work in small groups, and to improve the language program for non-college preparatory groups has also been started.

Enlarging Horizons in Mathematics

On an average of twice a month, selected sophomore mathematics classes will gather for large-group lectures on topics not usually covered (or not covered in this manner) in tenth-grade mathematics. The lectures will cover: *Problem Solving,* general and specific ways of attacking problems; *The Nature of Proof,* the application of logic and inductive and deductive reasoning to achieve proofs in both algebra and geometry; *Number Systems,* an examination of the decimal, binary, and duodecimal systems; *Computing Machines,* the mathematical basis of electronic computers; *Modern Mathematical Concepts,* including those of "sets and relations" and "groups"; *Probability and Statistics,* general survey in six lectures; and *The Complex Number System.* If these lectures prove successful, they will become part of the regular mathematics program.

A Complementary Approach to History

The study of nations, a survey course meeting two times a week for college preparatory classes, is being taught this year both in the

traditional manner and in a new dress. Under Newton Plan stimulus, a course has been prepared that supplements the regular class periods with large group lectures and small group discussions. The first long unit of the new course will be a fairly intensive study of one nation's history. For obvious reasons, in a school system that requires every student to study United States history in his junior or senior year, England was chosen as the subject for this first unit.

Museums and libraries have been searched for illustrative materials, and many slides and transparencies for over-head projection have been made. Here, even more than in the teaching of composition skills and literature, appear to be unmatched possibilities for a wise use of audio-visual materials, carefully selected or imaginatively created.

The rest of the school year will be devoted to a study of important periods in the history of other nations, principally European. These periods will always be shown in relation to the contemporary scene in England, with which the student is already familiar.

Also planned are two experiments in practical semantics to enrich the Grade XII course in problems of democracy.

New Ventures in the Business Department

The tape-recorder, overhead projector, and Reading Accelerator are being exploited in a new course in personal-use typing to teach posture, keyboard, format, and copying. Students will get training in composing at the keyboard: the typing teacher will assign the topics, which will have been recommended by a teacher of English; pupils will organize their thoughts and compose a theme on the typewriter. The teacher also plans to work with the school's reading clinic to help students whose speed at typing is limited by a slowness at reading.

For seniors there is a new elective in the use of electronic computers in science, business, and industry. Manufacturers' representatives will explain the machines, and students will visit installations in universities, insurance companies, and other local businesses. The course will explain how the machines are used and how they have led to new data-processing techniques. The natural curiosity which inspires every boy to dismember an alarm clock and prompts his skill with cars and hi-fi sets should extend, according to a Newton Plan premise, to the mechanical marvels which will help shape his working world as an adult.

General Education for the Secondary School

From the start, Newton Plan teachers have questioned the notion implicit in secondary-school organization that a student should be taught either a great deal or nothing at all about a given subject matter. To test this concept, plans are being formulated for a course in general education to be required of every boy and girl who would be graduated from Newton High School. This would provide instruction in some topics beyond those in the formal curricula, which are so rigidly shaped

to provide units of college admission or technical and vocational skills. The general education course, a three-year program, would give all students some familiarity with the rudiments of law, economics, and personal finance; with the great issues of contemporary society and government; with the techniques of understanding and enjoying music and the other fine arts. The school thus hopes to offer all students an opportunity—for many students, the last school opportunity—to consider themselves in relation to American civilization. Here, to some degree, students will contemplate the full possibilities of their education and their role in our culture.

Evaluation—Systematic and Objective

The statement, "Newton Plan is a success," is—and will be—as accurate as the statement, "It is a failure." Some projects have already proved successful, just as others have been tagged as mistakes. Evaluation, to be of real value, must be discriminatory: it must evaluate not only the whole, but also each of the parts. A class average of B does not indicate that each student in the class is a B pupil.

This segmental evaluation is important for two other reasons: different parts of the plan call for different combinations of evaluation methods; and other schools may seek information on the phases of Newton Plan that interest them severally, not on the total plan.

This part-by-part evaluation does not, of course, preclude summary. Any open and flexible framework of evaluation with experience and honesty or candidness as its chief ingredients, will result, the school believes, not only in better proportion in the final picture, but also in continued experimentation. Action research, control and experiment groups, depth interviews, questionnaires, conversations, testing, reports from workers, and visits by experienced observers are part of the evaluation.

For this, Newton Plan Studies is fortunate to be working with the Graduate School of Education, Harvard University, under a grant from the School and University Program for Research and Development. A joint committee of Harvard and Newton Plan workers have agreed on the conditions and requirements necessary for a complete, discriminating, and technically sound evaluation. (Any release of information to the public concerning this evaluation of Newton Plan will be mutually coordinated by Harvard and the Newton Plan Studies staff.)

Looking Ahead

These beginnings of Newton Plan would seem to include enough responsibility for one generation of school personnel. But the planning for Newton's second high school concerns administration and teachers in every department. The possibilities in science teaching are large. The creation of a new role in secondary school, the teacher-lecturer, with a distinguished salary for distinguished services still confronts this school.

Newton High School, Newtonville, Massachusetts, classes vary in size from 10 to 425 depending upon the purposes and plan of instruction. A teacher prepared visual aids for assistance in teaching large groups and is shown with the Vu-graph operated by the instructor.

Words are emphasized by teacher-prepared pictures for instruction in "Idiom and Language Craft."

More thought must be given to the complexity of teacher relationships and salary arrangements.

Two summer schools, operated by Newton Public School and under a Harvard-Newton program for training teacher-interns, permit students to repeat courses for credit; to elect courses in vocabulary, reading improvement, and driver education; and to preview courses they will take in the ensuing year.

New family schedules present a challenge to the schools. Staggered vacations, the shorter work week, moonlighting (holding more than one job) and the young person's freedom from home chores may alter the schools' calendar or create a demand for guidance in leisure activities.

Nor can a school system ignore the coming role of television—the greatest potential for the improvement of education since the invention of the printing press. Wisely employed, it will be of inestimable value in the immediate future. All these challenges, among others, mean more thinking, more planning, more work, and more responsibility for Newton Plan Studies and the entire staff.

Our age is characterized by the paradox of urban living with an increasingly nomadic population. Global travel tempts people to contemplate space travel. And yet, in essentials, the modern school varies little from the academy and the one-room school house of yesteryear. Some traditions remain sound, and society clings to all traditions as a comfort of stability in an unstable world. But the schools cannot stand still. If they are to prepare not only today's but also tomorrow's youth for purposeful lives, the schools must sense the future demands in secondary education and be prepared to meet them.

Junior high-school students in a spelling class in the Westside Community School, Omaha, Nebraska, listen with earphones to instructions and explanations tape-recorded in advance by their teacher.

CHAPTER VII

Tape Recordings Are Used To Teach Seventh Grade Students in Westside Junior-Senior High School, Omaha, Nebraska

GLENN PICKREL
CHARLES NEIDT
ROMAIN GIBSON

CAN *spelling be taught* to a hundred or more junior high-school students at one time by specially prepared tape as effectively as it can be taught to a group of thirty by each separate teacher?

Can the classroom teacher in the grades *teach modern languages with tapes* prepared for pupils by linguists?

What savings can be made in teacher effort and fatigue, in teachers' salaries, in cost of books and use of classrooms if *tapes* can be designed that *do teach*?

ORGANIZATION OF THE STUDY

These questions rated an affirmative answer in the first year of a pilot study project made at Westside High School, District 66, Omaha, Nebraska. A follow-through study for this school year—1957-1958—will attempt to verify last year's findings and relate, statistically, the savings that can be made by the judicious use of tapes for teaching spelling and foreign languages.

The study, "Ways in Which the Use of Tape Recordings May Produce Improvements in the Utilization of Staff and the Results of Instruction," was sponsored by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School of NASSP. The project included experimentation in the areas of spelling and conversational Spanish in the seventh grade of the Westside Junior-Senior High School.

SIGNIFICANT FINDINGS FROM THE SPELLING EXPERIMENT

Purposes

One aim of the spelling experiment was to determine whether or not pupils taught by tape alone would do as well or better than pupils taught by their regular teacher. The other purpose was to observe whether or

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not a tape made by the pupil's own teacher would prove more effective than the same tape made by another person.

Spelling Words Used

A functional word list had to be compiled that would not infringe upon the publishing rights of spelling book authors. Previous experiments in the school system had brought to light the fact that most of the pupils could handle heavier spelling loads than the usual speller imposes. Therefore, twenty units covering seven days for each unit of seventy-five words were compiled. The ordinary speller presents about forty-nine words per seven days. Several well-known lists of demon words, and teachers' lists of words missed in previous years went into the original list. All words were then evaluated by use of the "New Iowa Spelling Scale" by Greene, published by the State University of Iowa. Most of the words finally used were at 82 or below on the Spelling Scale with words above 82 considered as too easy or likely to be learned casually.

Groups of Pupils for Experimentation

Five groups of seventh-grade pupils were chosen for the experiment. The *Coordinated Scales of Attainment in Spelling, Test 7, Form A* from the Educational Test Bureau of Minneapolis was used for the pre-test and *Form B* for the end-of-the-year test. At the beginning of the year, Group I had an average spelling grade placement of 9.5; Group II, 8.3; Group III, 8.2; Group IV, 7.5; and Group V, 7.0. (See Table I)

Groups I, II, and III were entirely taught by tapes not prepared by the classroom teacher. Three rooms were wired together so that only the tape recorder in one room was needed for the three groups' instruction. At first, the teachers remained in their rooms attending to other tasks. Gradually, it became apparent, especially after spelling forms for each day's work were introduced, that the pupils needed no guidance from the classroom teacher. This left her free to leave the room during the tape-taught spelling class.

At first, Group IV was taught by a tape prepared by its own teacher. Later, since it was found that the pupils were not affected by the voice on the tape, this phase of the study where each teacher made her own tapes was dropped, and this group was also taught by the same tape as Groups I, II and III, but not at the same time.

Group V used the same word list as Groups I, II, III, and IV, but was taught by the teacher without the use of tapes.

For the first three units of spelling instruction, all of the tape-taught groups used earphones, four pupils to a distribution box. The eight distribution boxes in each room were then linked together and run into one tape recorder. As long as the machinery worked, the pupils were happy and satisfied; but, chipping of the plastic ear-clamps and troubles with the distribution boxes led to the discarding of the earphones. One or two loud speakers in each classroom, depending upon the size of the room, were substituted. Both teachers and pupils were better satisfied with this arrangement, and the spelling scores seemed unaffected.

It was found that occasionally a pupil failed to hear a word as it was being spelled on the tape. To overcome this possible disadvantage of the tape, a blackboard monitor was selected to write the words on the board as they were spelled by the tape. The class was told always to copy by ear but to check by eye after they had finished writing the word. This arrangement continued to work quite satisfactorily.

The Spelling Lesson Assignment and Testing

The spelling lesson centered around a worksheet that was filled out at the end of the twenty-minute period. Before the period was over, the pupils wrote each of the fifteen words five times with periods of reflection between each writing. A quick self-appraisal test on the fifteen words of the previous day was also administered. Tests were given covering the seventy-five words on the fifth and sixth days of the unit. Answers were checked in class by the pupils themselves using a correction pencil. It was usually necessary for the teacher to make a quick re-check of papers on the final test. Six weeks after the unit had been studied, the sentence form retention test was given.

Statistical Analysis of the Spelling Experiment

The types of tests administered were: locally constructed unit spelling tests, a locally constructed final examination, and a standardized achievement test at the end of the year. The unit tests were administered at the completion of each unit as well as five to seven weeks after the completion of the unit in order to measure retention. For purposes of the statistical analysis, the retention test scores on Units I, V, X, and XII were selected for treatment from among all units. This selection was made so as to obtain an indication of the progress of the five groups and their relative performances throughout the year. It was felt that two units near the start of the year, one near the middle of the year, and two at the end of the year would suffice for reflecting progress. Analyses were also made of the final examination results and of the standardized achievement test results.

The statistical technique utilized throughout the analyses of the data was the analysis of covariance, with spelling placement at the start of the year as the control variable. Each analysis reported here consists of two parts, *first,* a table in which the unadjusted means of the five groups on the control variable and the criterion are shown, and, *second,* a table in which the adjusted criterion means and the resulting t-values are shown. It should be noted that, in the column labeled "adjusted means," the mean for each group has been adjusted by the method of covariance for differences among individuals with respect to the control variable. Thus, the adjusted means represent the scores which the pupils would have made if each group had been equivalent on spelling placement.

Unit Retention Test Scores

In Table I are shown the Unit I test means and the control variable means. From this table, it is apparent that the Unit I test results, with

the exception of Group II, followed the spelling placement rankings. The extreme differences among the five groups on spelling placement are also noteworthy. It is the function of the analysis of covariance to account for the differences among groups in the control variable by adjusting the group criterion means accordingly. Because of the differences in the control variable scores, direct comparison of the unadjusted criterion means is not appropriate.

TABLE I. Unit I Spelling Retention and Spelling Placement Means

Group	*Number of Students*	*Unit I Mean*	*Spelling Placement Mean*
I	31	70.39	9.55
II	22	63.81	8.43
III	22	67.00	8.21
IV	27	67.33	7.83
V	26	55.34	6.98

TABLE II. Significance of Differences Between Unit I Test Means of Various Groups with Spelling Placement Held Constant

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(31) I – V (26)	66.21	60.61	I	2.31
(22) II – V (26)	60.85	59.27	–	.62
(22) III – V (26)	64.56	59.06	III	2.11
(27) IV – V (26)	65.08	58.39	IV	2.54

In Table II, the adjusted means resulting from the comparison between each group and Group V, the low ability group, are shown. In interpreting this and subsequent parallel tables, it should be noted that each mean is adjusted to a different degree for each comparison. This difference results from variation among groups in the control variable. From Table II, it can be seen that three groups, I, III, and IV exceeded Group V. Comparisons among the first four groups reflect negligible differences, with the possible exception of Group II's being somewhat lower. Thus, retention over the first unit is revealed to be somewhat lower for Group V and Group II than for the other three groups.

In Tables III and IV, analyses of the scores of the retention test over Unit V are shown. Comparison of Table IV with Table II reveals that the low ability group was making much more satisfactory progress in Unit V than in Unit I. In fact, Group V compared favorably with three of the other four groups, and exceeded Group III.

TABLE III. Unit V Spelling Retention and Spelling Placement Means

Group	*Number of Students*	*Unit V Mean*	*Spelling Placement Mean*
I	24	73.54	9.58
II	21	71.52	8.61
III	23	67.48	8.32
IV	27	72.00	7.73
V	23	67.91	7.04

TABLE IV. Significance of Differences Between Unit V Test Means of Various Groups with Spelling Placement Controlled

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(24) I – V (23)	70.86	70.64	–	.40
(21) II – V (23)	69.11	70.31	–	.02
(23) III – V (23)	65.63	68.18	–	2.01
(27) IV – V (23)	71.25	68.68	–	1.17

In Tables V and VI, the analyses involving the retention test scores for Unit X are shown. At this point in the experiment, the groups were relatively parallel except for Group IV which showed some relative superiority.

TABLE V. Unit X Spelling Retention and Spelling Placement Means

Group	*Number of Students*	*Unit X Mean*	*Spelling Placement Mean*
I	24	31.08	9.38
II	19	29.74	8.76
III	23	25.35	8.32
IV	24	29.17	7.85
V	21	21.29	7.05

TABLE VI. Significance of Differences Between Unit X Test Means of Various Groups with Spelling Placement Held Constant

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(24) I – V (21)	27.55	26.15	–	.76
(19) II – V (21)	25.98	24.69	–	.60
(23) III – V (21)	22.99	23.87	–	.50
(24) IV – V (21)	27.87	22.77	IV	3.34

In Tables VII and VIII, the analyses based on Unit XII are shown. Retention over Unit XII reflected the superiority of Groups III and IV, with somewhat less progress revealed for Groups II and V.

TABLE VII. Unit XII Spelling Retention and Spelling Placement

Group	Number of Students	Means: Unit XII Mean	Means: Spelling Placement Mean
I	22	37.59	9.59
II	20	34.45	8.66
III	23	33.52	8.32
IV	24	33.83	7.80
V	22	26.27	7.03

TABLE VIII. Significance of Differences Between Unit XII Test Means of Various Groups with Spelling Placement Held Constant

Comparisons	Adjusted Means		Group Favored	t
(22) I – V (22)	32.11	31.76	–	.70
(20) II – V (22)	30.25	30.06	–	.02
(23) III – V (22)	33.37	26.11	III	6.40
(24) IV – V (22)	32.06	28.19	IV	2.17

Final Examination Test Scores

The final examination consisted of words which had been studied throughout the entire year. The data resulting from this test and the subsequent analysis are shown in Tables IX and X.

Inspection of these two tables reveals that the groups were remarkably parallel in their achievement as measured by the final examination. In comparison with Group V, no significant differences were revealed in the adjusted means. Whereas the low ability group, Group V, started at perhaps a slower rate than the other groups, this group was achieving on a comparable basis with the other groups at the end of the experiment so far as words studied were concerned.

TABLE IX. Final Spelling Test and Spelling Placement Means

Group	Number of Students	Final Test Mean	Spelling Placement Mean
I	26	67.76	9.40
II	20	60.30	8.46
III	19	60.15	8.16
IV	25	62.12	7.88
V	24	54.29	6.98

TABLE X. Significance of Differences Between Final Spelling Test Means of Various Groups with Spelling Placement Held Constant

Comparisons	Adjusted Means		Group Favored	t
(26) I – V (24)	62.77	59.70	–	1.66
(20) II – V (24)	55.05	58.66	–	1.75
(19) III – V (24)	56.56	57.13	–	.40
(25) IV – V (24)	59.73	56.77	–	1.66

Standardized Achievement Test Scores

At the end of the year, a standardized achievement test in spelling was administered to the five groups. This test contained many words which were not necessarily studied during the year. Results of the administration of this and subsequent analyses are shown in Tables XI and XII. Inspection of these tables reveals a distinct superiority for Group I. Proportional achievement was also slightly higher than expectancy in Group IV.

When each group was compared with Group V, only Group I reflected a significant difference. Since Group I was composed of high ability students, it is understandable that they achieved highest on the standardized achievement test containing words which may not have been specifically studied during the year. Students of this ability are quite likely to read more widely and, hence, build larger vocabularies than are students of relatively lower ability.

It would appear, however, that the use of tapes was effective in teaching seventh-grade spelling when a standardized test was used as the criterion and spelling placement was used as the control variable.

Summary. These three conclusions appear warranted on the basis of test results covering the work of the first year of the experiment:

1. The low ability group made a slower start in spelling progress than did the other groups in the experiment.
2. From Unit V through Unit XII, the groups were remarkably similar in achievement when spelling placement at the start of the year was controlled.
3. All three measures of spelling achievement reflect the effectiveness of the use of tapes for teaching seventh-grade spelling.

TABLE XI. Standardized Achievement Spelling Test and Spelling Placement Means

Group	Number of Students	Final Test Mean	Spelling Placement Mean
I	23	27.48	9.53
II	18	25.61	8.59
III	23	23.00	8.32
IV	24	24.96	7.83
V	21	18.67	7.04

TABLE XII. Significance of Differences Between Standardized Achievement Spelling Test Means of Various Groups with Spelling Placement Held Constant

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(23) I – V (21)	27.04	23.77	I	3.63
(18) II – V (21)	22.44	21.22	–	.10
(23) III – V (21)	20.85	21.05	–	.28
(24) IV – V (21)	23.66	19.97	–	.48

Significant Findings from the Conversational Spanish Experiment

Purposes

In conversational Spanish, the aims of the study were twofold: (1) To determine whether Spanish could be taught effectively by tape when the classroom teacher knows no Spanish at the beginning of the year, but learns with the class; (2) Can instruction be improved when the tape is used by Spanish teachers.

Group Organization and Procedures

The same five-group organization was used as in the spelling experiment. Four groups had regular classroom teachers with little or no knowledge of Spanish. The fifth group was taught by a Spanish teacher.

In the four groups, the classroom teacher was used as a partner to the linguist on the tape; the teacher found it necessary to copy vocabulary and phrases along with the pupils. The teacher also governed the rate at which the tape was played or replayed. All three of the non-Spanish speaking teachers found they could manage most of the classroom questions by reading the teacher's manual of the tape two or three days ahead of the class. Occasionally, questions had to be referred to the Spanish teacher.

Group V was also taught by tape, but in this class the tape was handled by a Spanish teacher who added comments to the tape.

Statistical Analysis of the Spanish Experiment

In making the statistical analysis, it was decided that spelling placement would be used as a control variable. This spelling placement score was obtained before the start of the experiment. The purpose of the control variable in the analysis is to eliminate (as nearly as possible) differences among individuals with respect to a variable which could bias the investigation. As can be seen in Table XIII, Group V was particularly low on spelling placement and Group I particularly high.

If this difference in placement in spelling were ignored, it might be inferred that Groups I and II achieved higher scores on the Spanish test than did Group V. The analysis of covariance permits the comparison of groups with respect to some criterion while holding constant the effect of one or more control variables. The results from the analysis of

TABLE XIII. First-Semester Spanish Test and Spelling Placement Means for All Groups

Group	*Number of Students*	*Spanish Test Mean*	*Spelling Placement Mean*
I	29	94.79	9.64
II	22	99.14	8.67
III	28	78.04	8.28
IV	31	71.97	7.75
V	25	87.36	7.00

covariance are the equivalent of pairing individuals on the basis of the control variable without going through the laborious pairing procedure. The comparison in covariance analysis is accomplished by adjusting the criterion means according to the relationship of the criterion to the control variable. The means actually tested in covariance analysis are, therefore, not the raw score means; they have been adjusted for differences between groups on the control variable.

In Table XIV, the results of the application of the analysis of covariance in the comparison of each group with Group V are shown.

In the comparison of the adjusted means of Groups I and V, a significant difference in favor of Group V was found. Although the Spanish test mean for Group I was higher than that for Group V before the adjustment for differences in the control variable (spelling placement) was made, the group means are reversed in Table XIV. The reversal has occurred because of the rather extreme difference in mean spelling placement between these two groups. Stated otherwise, although Group I made a higher unadjusted mean Spanish test score than Group V, it was not proportionately as high as was the mean score obtained by Group V—when the groups were equated for spelling placement.

Examination of the comparative data between Groups II and V in Table XIV reveals no significant difference between these two groups. Groups II and V achieved equally well on the Spanish test when their spelling placement was taken into consideration.

TABLE XIV. Significance of Differences Between First-Semester Spanish Test Means of Various Groups with Spelling Placement Controlled

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(29) I – V (25)	82.84	101.25	V	2.95**
(22) II – V (25)	91.59	94.00	–	.28
(28) III – V (25)	72.65	93.39	V	3.64**
(31) IV – V (25)	68.53	91.52	V	3.36**

**Significant at the one per cent level of confidence

Significant differences between Groups III and V and Groups IV and V are also found in Table XIV. In both of these comparisons, the difference in Spanish test means was made even more pronounced in the original direction (in favor of Group V) by the adjustment process.

To evaluate the effectiveness of using spelling placement as a control variable, the coefficient of correlation between the Spanish test and spelling placement was computed. This coefficient of correlation (N-135) was found to be .56, significantly different from zero at the one per cent level. It can be concluded that spelling placement is an effective control for Spanish achievement.

In summary, one of the groups taught by untrained Spanish teachers, Group II, achieved about as well as did Group V, taught by the trained Spanish teacher, when all groups used the same tapes and when individual differences in spelling placement were controlled. Group V exceeded Groups I, III, and IV at the one per cent level of significance, however.

Statistical Analysis of Final Spanish Test Scores

The final written examination was administered to all groups of seventh-grade Spanish students at the end of the second semester of the 1956-57 school year. Whereas 145 students participated in the first-semester test, various changes resulted in the reduction of the total number of participants at the end of the second semester to 113. An analysis of covariance, parallel to the analysis of the test scores at the end of the first semester, was made of the final test scores. Spelling placement was again used as the control variable.

TABLE XV. Final Second-Semester Spanish Test and Spelling Placement Means for All Groups

Group	*Numbers of Students*	*Final Spanish Test Mean*	*Spelling Placement Mean*
I	26	86.04	9.40
II	19	84.89	8.53
III	19	66.21	8.16
IV	25	59.44	7.88
V	24	85.33	6.98

The final Spanish test and spelling placement means for all sections are shown in Table XV. Whereas Group II ranked highest in terms of the unadjusted criterion mean at the end of the first semester, Group I ranked highest on the final test. Other than the reversal in rank order of Groups I and II, however, the other groups ranked the same as they did at the end of the first semester.

The slight differences between the mean spelling placement values in Tables XIII and XV for all groups are the result of changes in the number of students involved in the two analyses. In no instance did the rank of a group on the basis of mean spelling placement change.

TABLE XVI. Significance of Differences Between Final Spanish Test Means of Various Groups with Spelling Placement Controlled

Comparisons	*Adjusted Means*		*Group Favored*	*t*
(26) I – V (24)	80.67	95.37	V	2.57*
(19) II – V (24)	81.49	88.88	–	1.26
(19) III – V (24)	64.37	85.47	V	2.95**
(25) IV – V (24)	58.71	88.60	V	4.85**

*Significant at the five per cent level of confidence
**Significant at the one per cent level of confidence

In Table XVI, the results of the covariance analysis are shown. From this table, it can be seen that the results of the final test parallel those of the first semester very closely. Group V, taught by the trained Spanish teacher using the tapes she had prepared, scored significantly higher on the final test than Groups I, II, or IV. There was no significant difference between the mean scores of Groups II and V when spelling placement was controlled.

By comparing the corresponding t-values in Tables XIV and XVI, it can be seen that Group I gained slightly on Group V, Group II decreased slightly, Group III gained some, and Group IV was decreased considerably. In general, however, performances on the two examinations were relatively comparable.

In summary, analysis of the final Spanish test scores yielded results very similar to those of the first semester. Pupils taught by the trained Spanish teacher (Group V) using tape exceeded those taught by untrained Spanish teachers using tapes in three of the four comparisons. There was no significant difference, however, between the final mean test scores of pupils in Group II and those in Group V.

Statistical Analysis of Final Oral Spanish Test

At the end of the second semester, ten students were selected at random from Group I and ten from Group V to be administered an oral examination covering conversational Spanish. These twenty students recorded their responses to the oral questions on tape. The tape recordings were then played to a panel of Spanish specialists at the University of Nebraska Department of Romance Languages who rated each student's performance individually.

The content of the oral examination was recommended to the trained Spanish teacher, although the specific items were chosen by her as being representative of the material studied. The oral examination consisted of five parts—Pronunciation, Aptness of Reply, Quickness of Reply, Translation of Material Studied, and Translation of New Material.

Each student was assigned a number. A code sheet, consisting of the students' names and numbers, was prepared. When each student took the examination, his number was read into the microphone. Thus, the

tapes consisted of the responses of twenty students, identified by number only, to the same series of test items.

To evaluate the oral responses which had been recorded on tapes, a panel consisting of three specialists in Spanish rated each student's performance using an especially prepared rating form. These were Dr. Lloyd D. Teale, Mrs. Maria L. Moreno, and Hilario S. Saenz, all of the Department of Romance Languages, University of Nebraska. The rating scale was based on a logical analysis of the objectives of conversational Spanish made by Dr. Teale.

After the three specialists had listened to all responses made by the twenty students and had completed their independent rating, the rating scales were sorted according to group and scored. The scores, along with the spelling placement of each student, are shown in Table XVII.

The mean rating for Group II was 39.17 and the mean rating for Group V was 27.05. The mean spelling placement for Group II was 9.7 as compared to 7.2 for Group V. When the analysis of covariance was applied to the data in Table XVII, using spelling placement as the control variable, a nonsignificant t-score of .68 resulted. The adjusted means for the two groups were 33.92 for Group II and 31.15 for Group V. The coefficient of correlation between spelling placement and oral Spanish examination ratings was found to be .66 indicating that spelling placement is an effective control variable for use with such ratings.

To determine the reliability of the ratings, the intercorrelations between each pair of raters were computed. The following reliability coefficients between raters resulted:

Raters	*Correlation*
A – B	.97
A – C	.97
B – C	.98

The ratings, therefore, were demonstrated to have extremely high reliability. Actually, the oral test could have been shortened without losing sensitivity within the distributions of ratings.

Summary and Conclusions

Three statistical evaluations of the experiment involving teaching seventh-grade students at Westside Junior-Senior High School by tapes were made. A written examination was administered at the end of the first semester, and another final written examination was administered at the end of the school year. At the end of the school year, a final oral examination was administered to a sample of twenty students and their responses were evaluated by a panel of three Spanish specialists. Spelling grade placement at the start of the experiment was used as the control variable for all three analyses of covariance made of the data. On the basis of the analyses the following conclusions seem warranted:

TABLE XVII. Oral Conversational Spanish Evaluation

	Pupil No.	*Spelling Placement*	*Specialist*			*Mean*	*Grand Mean*
			A	*B*	*C*		
Group II	1	10.7	26	27	30	27.7	
	3	10.7	51	51	48	50.0	
	7	10.7	24	25	26	25.0	
	12	9.3	42	40	42	41.3	
	2	7.6	43	39	42	41.3	
	5	10.7	44	48	49	47.0	
	8	10.7	41	46	45	44.0	
	11	10.7	49	48	47	48.0	
	17	7.7	27	29	33	28.7	
	19	8.2	37	42	37	38.7	39.17
	Mean	9.7					
Group V	10	7.2	36	36	36	36.0	
	9	6.2	16	18	16	16.7	
	6	8.2	34	36	38	36.0	
	4	7.0	17	19	21	19.0	
	20	7.2	18	24	21	21.0	
	18	6.8	24	28	28	26.8	
	14	7.2	26	30	30	28.7	
	15	6.6	19	18	18	18.3	
	16	8.5	41	42	42	41.7	
	13	6.8	25	27	27	26.3	27.05
	Mean	7.2					

1. Spelling grade placement is an effective control variable for experimentation in Spanish teaching.
2. The use of tape recordings is an effective method of teaching conversational Spanish to seventh-grade students.
3. Regular classroom teachers who are untrained in Spanish can teach conversational Spanish effectively when they base their teaching on tapes prepared by a Spanish specialist.

Reactions of Teachers in the Study

All three teachers were enthusiastic about the Spanish classes. Two of the three (the teachers with the least experience) were definitely in favor of the teaching of spelling by tape because of the excellent discipline in class during the period and because it gave them a break in the day's tension. The third teacher (fifteen years experience) said that, while she appreciated the break, there was little difference in her mind between teaching by tape or doing it herself.

CHAPTER VIII

Future Teachers Are Recruited and Plans Made for a Teacher-Trainee Group in the St. Paul, Minnesota, Schools

KENNETH R. DOANE
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BACKGROUND AND DESCRIPTION OF THE PROJECT

NUMEROUS references have been made to the influx of students which will come to the schools and colleges in the decades or two immediately ahead.. This condition is expected to add to the shortage of well-qualified teachers. By 1969, the children already born will push secondary-school enrollments to more than 70 per cent above the 1954 level.[1] Ray C. Maul lists ten reasons for the shortage of qualified teachers during the past decade.[2] A brief summary of these follows :

1. The American public is delegating to the public school systems larger responsibility for the education of each child.

2. There is a year by year increase in the number of children to be educated.

3. The shortage of teachers is an inseparable part of a much larger general demand for trained manpower.

4. During the decade, 1945-1955, the number of youth to reach adulthood decreased at the rate of about 100,000 annually. The total number available to enter the labor force of the nation was still further decreased because a larger percentage of this diminishing group of 18 to 21 year olds entered college.

5. During the decade just past, military manpower needs of a continuing nature in peacetime have increased, and the American public has generally accepted it.

6. The expanding employment opportunities for educated women have proved to be severe competition for classroom teaching, since approximately 87 per cent of all elementary teachers and approximately 54 per cent of all high-school teachers are women.

7. In five of the ten years just past, the total number of college graduates for all types of positions decreased fully one third.

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[1] *Teachers for Tomorrow*. The Fund for the Advancement of Education, 655 Madison Avenue, New York, New York, Bulletin No. 2, p. 12.

[2] Maul, Ray C. "The 1957 Teacher Supply and Demand Report", *The Journal of Teacher Education*, Vol. VIII, No. 1. March 1957, p. 18.

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8. Many young women are assuming full-time homemaking as an occupation at an earlier age than in past years and are thus withdrawn from the total supply of job seekers.

9. The demand for teachers (in terms of the available supply) is always a local condition. After the basic question of a competitive salary has been answered, each district must analyze the whole constellation of factors which make for personal and professional satisfaction of the teacher.

10. It is a responsibility of every school district to furnish its share of the new teachers. From some communities there is a regular flow of high-school graduates to colleges to be trained as teachers; from other communities the flow is negligible. In neither case ordinarily is this an accident. The enthusiasm of high-school graduates for the teaching profession is a reflection of the many factors concerned with teachers and the schools in the community. What an individual community and its educational leaders are doing is most important.

Teacher Demand and Supply in Minnesota

F. E. Heinemann, Director of Teacher Personnel, Minnesota State Department of Education,[3] analyzed what happened to the graduates of Minnesota teacher education institutions after completion of a teacher education program. The survey made in the fall of 1956 shows that, of those persons who completed teacher education programs between September 1, 1955, and August 31, 1956, 63.42 per cent took teaching positions in Minnesota, and 16.18 per cent took teaching positions in other states. This represents approximately 80 per cent going into teaching. This corresponds with statistics in neighboring states.

A Solution to the Secondary-School Teacher Shortage Problem

These suggestions are frequently mentioned as a solution of the problem on a long-term basis:

1. Make teaching attractive. This includes providing the best possible working and living conditions for teachers.

2. Offer scholarships to encourage the ablest young people to go to college and to select teaching as a profession.

3. Pay salaries that will attract the ablest persons to the teaching profession.

4. Induce former teachers to return to the profession; for example, housewives and mothers who have been away for several years.

5. Encourage liberal arts college graduates, and others who hold college degrees, to qualify for teaching.

The Commission on the Experimental Study of the Utilization of the Staff in the Secondary School approved a proposal presented by the St. Paul Public Schools. In brief, this Teacher Recruitment Project seeks to tap a new source of secondary-school teachers by providing scholarships to thirty well-qualified high-school graduates who might not otherwise attend college because of financial limitations. These thirty trainees will work with skilled St. Paul teachers in teacher utilization experiments. The gross cost of the project for the five-year period will be $175,000. Of this amount, the NASSP Commission is committed to

[3] Heinemann, F. E. "Teacher Demand and Supply," *Minnesota Journal of Education*, Vol. 37, No. 10, May 1957, p. 18.

contribute $90,000; the St. Paul Public Schools will be responsible for the difference.

St. Paul, Minnesota, is the capital city with an estimated population of 335,000 people. The public secondary schools had a population of 14,469 pupils in junior and senior high schools in September 1956. Of this number 4,393 were in junior high schools. The pupil population is taught in nine high schools and five junior high schools by 587 teachers. In September 1956, the average class size in the junior high schools was 29 (Median 29); the average class size in the senior high schools was 28.3 (Median 29). St. Paul, like other cities, has felt the pinch of the teacher shortage in its secondary schools. Approximately one hundred additional secondary-school teachers will be needed in 1960 above the needs of September 1956.

Project Advisory Committee

The Project Advisory Committee consists of ten members—Kenneth R. Doane, Secretary, Chairman, Department of Education, Hamline University; and the following persons from the St. Paul Public Schools: George Edberg, Director of Personnel; Lyle T. Farmer, Teacher, Johnson High School; A. H. Ingebretson, Principal, Humboldt High School; Clarence W. Johnson, Counselor, Cleveland Junior High School; John J. Mather, Teacher, Murray High School; Gordon E. Miniclier, Principal, Washington High School; W. J. Scanlan, Principal, Central High School; Margaret Thornton, Counselor, Humboldt High School; and Glenn F. Varner, Chairman, Assistant Superintendent, Secondary and Vocational Education.

One of the members, Mr. Glenn F. Varner is also a member of the National Commission. Three reasons were accepted for creation of the Project Advisory Committee: (1) determine policy democratically; (2) give status to the project; and (3) more informal decisions are likely if a responsible committee of ten professional people contribute to the thinking of the committee.

The Project Advisory Committee, appointed on April 16, 1956, has met fifteen times through June 3, 1957. In that time the following major policies have been adopted:

1. The recruitment of well-qualified young people as prospective secondary-school teachers was its most important business. Thirty trainees were granted scholarships to assist them in financing their college education.
2. Each student who was considered as a prospective candidate was expected to fulfill the following five conditions:
   a. Be unable to attend college because of financial limitations.
   b. Be able to succeed in college as indicated through available data.
   c. Be interested in secondary-school teaching as a career.
   d. Be willing to work as a teacher-trainee with a project teacher.
   e. Agree to earn a college degree over a five-year period and to contribute to self-support while securing the degree.
3. The sums of money granted each year to each trainee for the next five years follows:

	Private College	*State University*
First year	$700	$500
Second year	800	600
Third year	800	600
Fourth year	850	650
Fifth year	850	650

The figures were derived from a study of costs of attending accredited colleges of St. Paul and Minneapolis. Since the trainees will be living at home and commuting to the various campuses, these factors were considered: tuition, fees, books, clothing, lunches, transportation, and incidentals.

4. The scholarship is an award and not a loan. The grant is divided into two or three equal parts each year depending on whether a semester or a quarter system is in operation at the college. The trainee is expected to keep an account of tuition, books, fees, and other expenses directly related to the costs of collegiate work.

5. The Declaration of Intent specifies that the trainee agrees to contribute to his self-support by working during vacation periods. Any employment engaged in during the regular school year must be approved by the Project Advisory Committee. If the trainee wants to accept employment during the school year, this employment cannot interfere with his success in college, participation in weekly seminars, nor with his field work in the St. Paul secondary schools.

6. The trainee will do field work in the St. Paul Public secondary schools as follows: the first year, 2 hours per week; the second year, 5 hours per week; the third year, 10 hours per week; the fourth year, 15 hours per week; and the fifth year, 15 hours per week. During the first year, the trainee will do much exploration in classrooms. It is intended he should observe in the curricular area of interests to him. The Project Advisory Committee recognizes the importance of individualization of each observation to fit the needs of the particular trainee. He is encouraged to explore and find areas that interest him and prove most valuable to him professionally.

7. Trainees will attend weekly seminars for orientation to the philosophy and objectives of secondary education in the St. Paul Public Schools. It is anticipated the trainees will become acquainted with the personnel of the school system, including the superintendent and his administrative staff of supervisors and directors. Too, the trainee, through the seminar, will become acquainted with the community agencies that work closely with the schools in serving the needs of youth; for example, police officers working with juveniles, probation officers, social workers, recreation leaders. In the years ahead, the second to the fifth years, the trainees will continue with their seminars and with the time spent in the classroom. While the seminars are not structured at the present time, it is anticipated that they will revolve around observations in the classroom, psychology of learning, and getting acquainted with the details of classroom management. Because the hours in the classroom will increase markedly after the second year, it is anticipated that the trainee should begin to be very helpful in the classroom.

8. In order that the best professional relations possible exist between the secondary schools and the colleges involved, a college advisory committee composed of one representative from each of the colleges the trainees will attend was created; its functions are:

a. To assist in expediting programs for trainees in the several institutions.
b. To make adjustments in college programs within the design of the five-year experiment.
c. To cooperate with the project supervisor in the details of the project.

The Teacher-Trainees Period. Teacher-trainees may attend any of the four-year colleges of the St. Paul-Minneapolis area that are approved by the Minnesota State Board of Education and accredited by the North Central Association of Colleges and Secondary Schools.

The college course load suggested for each of the five years for the teacher-trainees follows (Credits should be interpreted as semester hour credits): First year—30, Second—26, Third—24, Fourth—20, and Fifth—20.

The colleges have cooperated to the utmost in working out a plan whereby the trainee attends college for a five-year period, yet tuition is charged for the four-year program only since the trainee will complete academic work for the bachelor's degree. The college work is extended over an additional year because the trainee will spend more and more time in the secondary-school classroom each year from two hours per week in the first year to fifteen in the fourth and fifth years.

The Project Supervisor

The supervisor must be familiar with the St. Paul Public Schools and the teacher education institutions in the metropolitan area. The supervisor must be qualified by training and experience to coordinate the teacher-trainee work and the teacher education program. The duties of the supervisor follow along these lines:

1. Select, with the help of others, the teacher trainees
2. Select, with the help of others, the project teachers with whom the teacher trainees will work for the five-year program
3. Assign, with the help of others, the teacher trainees to the particular project teachers
4. Plan field work and teacher education programs
5. Meet with the teacher trainees as a group in seminar
6. Meet with the group of project teachers regularly
7. Serve as secretary to the Project Advisory Committee
8. Administer the funds of the project
9. Promote selective recruitment of teachers in St. Paul
10. Promote and assist Future Teachers of America Clubs in the St. Paul secondary schools
11. Assist trainees to find suitable summer employment

Selection of Teacher-Trainees

The generalized statements of criteria used in the selection of the teacher-trainees were discussed earlier. Since the Project sought to "tap a new source of supply" of secondary-school teachers from the large number of high ability graduates from limited-income families, financial need was an important criterion. To conserve human energy and financial resources, those finally selected would be of high potential for success as college students and as secondary-school teachers. Available

objective-type data would be used, and estimate-type data would be sought. The teacher-trainees were to be genuinely interested in teaching as a vocation and committed to making an investment of five years of their lives and assuming partial self-support.

Early in the planning for the selection of the teacher-trainees, the Project Advisory Committee formulated the following specific questions to be raised about each of the applicants for a five-year grant. These questions arise from the general criteria outlined earlier:

1. What is the health history and status?
2. What is the gross family income and economic circumstances of the family?
3. What has been the performance as a secondary-school pupil in classes and in extraclass activities?
4. What has been the performance as a youth in extraschool activities?
5. What has been the performance on standardized tests of information and interpretation?
6. What evidences are available pertaining to success in college and potential for success as a secondary-school teacher?
7. What is the pattern of interests and interest in teaching?
8. What is the personality structure?

The cooperation of secondary-school counselors and teachers was sought in the accumulation of information about applicants for grants. In January 1957, the St. Paul Board of Education gave final approval to the Teacher Recruitment Project. A description of the project was given to the *St. Paul Dispatch Pioneer Press* and to each secondary-school teacher in the St. Paul Public Schools. Each teacher received a three-page pamphlet that gave more details about the Project. Simultaneously, copies of the news release and the accompanying descriptive bulletin were sent to private and parochial secondary schools enrolling youth who reside in St. Paul. The Project was discussed and clarified at two meetings with the secondary-school counselors. Members of the Project Advisory Committee presented the Project to their colleagues at faculty meetings in the several buildings. Counselors were given a supply of application forms, data forms to be completed by a counselor to accompany each application, and descriptive pamphlets on the Project. Counselors and teachers were asked to encourage qualified twelfth-grade students and recent high-school graduates who had not gone to college to apply. The deadline for applications was March 1, 1957.

When an applicant submitted his application form signed by the principal of his secondary school to his counselor, the wheels were set in motion to gather considerable information about him. Many sources were used. The application form provided:

1. Name, address, phone, sex, age, birthdate
2. Name of parent or guardian, names and ages of siblings, others living in the home
3. Secondary schools attended and graduated from
4. Extraclass activities in school
5. Extraschool activities

6. Hobbies and leisure time activities
7. Names of two people, not teachers, for possible reference, if necessary
8. Leadership experiences
9. Willingness to work as a teacher-trainee for a five-year period
10. Willingness to earn a college degree over a five-year period
11. Willingness to earn money during summers to contribute to self-support
12. College to attend if grant was awarded

The counselor provided:

1. IQ from the results of the *Otis Test of Mental Ability* taken in the ninth grade, characteristically
2. High-school rank as determined from scholastic performance up to the time of application
3. Percentile rank from the *American Council on Education Psychological Examination* taken in the eleventh grade, using entering freshmen at the University of Minnesota as the norm group
4. Percentile rank on the *Cooperative English Test* taken in the eleventh grade, using entering freshmen at the University of Minnesota as the norm group
5. Percentile ranks on the *Differential Aptitude Tests* in verbal reasoning, numerical ability, abstract reasoning, space relations, mechanical reasoning, clerical speed and accuracy, spelling, and language usage taken in the ninth grade, characteristically
6. Percentile ranks on the *Iowa Tests of Educational Development* in understanding of basic social concepts, background in the natural sciences, correctness and appropriateness of expression, ability to do qualitative thinking, ability to interpret reading materials in the social sciences, ability to interpret reading materials in the natural sciences, ability to interpret literary materials, general vocabulary, and use of sources of information taken in the tenth grade, characteristically
7. Percentile ranks on the *Kuder Preference Record* in mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, clerical taken in the twelfth grade, characteristically
8. Areas of measured interests of "B" or better level on the *Strong Vocational Interest Inventory* taken in the twelfth grade, characteristically
9. Gross family income and number of dependents
10. Extraclass and extraschool activities
11. Tentative major and minor
12. Supplementary remarks including attention to special interests, hobbies, work experiences, extraordinary home conditions, choice of friends

Three teachers provided estimates on:

1. Work habits
2. Leadership ability
3. Ability to get along with young people
4. Ability to get along with adults
5. Speech skill
6. Personality
7. Character
8. Probability of success as a college student
9. Potential as a secondary-school teacher.

Supplementary testing on April 15, 1957, was done to obtain the following:

1. Personality profile from the *Minnesota Multiphasic Personality Inventory*
2. Percentile ranks on the *Cooperative General Culture Test* in social studies, literature, science, mathematics, fine arts, using a national distribution of college sophomores as the norm group
3. Percentile ranks on the *Minnesota Teacher Attitude Inventory*, using a distribution of twelfth-grade students as the norm group

The school nurse provided a brief summary of health history and status. A thirty to forty minute recorded interview provided answers to the following questions and observations in an interview situation:

1. What activities do you find most profitable?
2. How do you get along with others and how do they get along with you?
3. Do you have questions about the Teacher Recruitment Project?
4. Why are you interested in your expressed curriculum area reported on the counselor's data form?
5. Why do you want to be a teacher?
6. Why do you want to be a secondary-school teacher?
7. What traits and abilities do you possess that indicate possible success as a secondary-school teacher?
8. What are some of the complexities of secondary-school teaching?
9. To what standard of living do you aspire?
10. What are some of the characteristics of a successful secondary-school teacher?
11. What are some of the things that you will avoid as a secondary-school teacher?
12. Why are you interested in the Teacher Recruitment Project?
13. What kind of work are you interested in for the summer of 1957?

The Project Advisory Committee created a sub-committee of four members to review the available data on each applicant. After the data had been collated on summary work-sheets, the sub-committee met five times to consider the applicants. The sub-committee reported its findings and recommendations to the Advisory Committee. After further discussion of each applicant, the Committee formally identified thirty individuals as teacher-trainees to begin the five-year Project in September 1957. Five alternates were named and ranked. This action was taken on April 25, 1957, and May 22, 1957. Only then, were the names, sex, and schools announced to the Advisory Committee; this information had been reported in code form to maximize the objectivity. Letters of Award and Declarations of Intent were mailed to the thirty award winners immediately, and a report was made to the St. Paul School Board. An announcement was subsequently made in the *St. Paul Dispatch-Pioneer Press.*

Characteristics of the Selected Trainees

The limitations of the practice of awarding scholarship grants solely on the basis of test or other objective-type data are well known. As shown in Table I, the selected trainees, as a group, do stand well on

TABLE I. Summary of Objective-Type Data Available on Each Trainee

Factor	*Median Percentile Rank*	*Lowest Percentile Rank*	*Highest Percentile Rank*	*Mean Score*	*A Representative Profile*
1. High-School Rank	94	62	100		100
2. IQ from *Otis Test*	119	98	127	117.2	123
3. *American Council on Educ. Psych. Test* - Total	82	15	100	115.4	82
4. *Differential Aptitude Tests*					
a. Verbal Reasoning	85	15	99		97
b. Numerical Ability	85	25	99		92
c. Abstract Reasoning	87	25	99		99
d. Space Relations	77	20	99		99
e. Mechanical Reasoning	68	5	99		96
f. Clerical Speed and Accuracy	80	15	99		50
g. Spelling	74	10	95		87
h. Language Usage	70	10	97		82
5. *Cooperative English Test*					
a. Mechanics	63	17	95	105.8	70
b. Effectiveness	67	4	100	48.4	93
c. Total	69	10	92	154.2	78
6. *Iowa Tests of Educational Development*					
a. Social Science	79	37	99		88
b. Natural Science	76	12	95		95
c. Language	75	27	97		94
d. Mathematics	80	3	96		89
e. Reading-Soc. St.	81	42	96		90
f. Reading-Nat. Sci.	81	37	98		96
g. Reading-Literature	77	30	99		85
h. Vocabulary	88	51	99		94
i. Total of above	85	41	97		93
j. Use of Sources	84	25	99		98
7. *Cooperative General Culture Tests*					
a. Social Studies	50	12	97	35.0	97
b. Literature	55	9	93	19.8	91
c. Science	50	7	92	36.2	75
d. Mathematics	60	15	99	20.7	88
e. Fine Arts	50	12	96	24.7	60
f. Total	55	12	95	136.4	91
8. *Minnesota Teacher Attitude Inventory*	48	3	97	5.7	42

these measures of ability, comprehension, and performance. College sophomore norms were used to evaluate the performance of the applicants on the *Cooperative General Culture Tests;* none of these trainees had been in college, and all but two were twelfth-grade pupils at the time they took the test. All the group medians were at or above the college sophomore medians, respectively.

Individual differences in the profiles were apparent. The trainee with the Otis-IQ of 98 was at the 62nd percentile on the *A.C.E. Psychological Test.* In all cases of low scores on any of the above measures, the Project Advisory Committee assured itself of the potential of the applicant by investigating other sources of information.

The representative profile in the right-hand column of Table I illustrates the objective-type data profile common among the trainees. The trainee chosen was neither atypical nor typical, but an example of one of thirty trainees.

The high regard in which the trainees are held by their teachers is indicated by the preponderance of "superior" and "good" ratings on the eight factors shown in Table II. Estimates were collected from three teachers for each trainee. The right-hand column of Table II illustrates a typical profile of estimates for one of the trainees.

TABLE II. Estimates by Teachers of Qualities of the Selected Trainees

	Number of						*A Rep. Profile*
Factor	*Superior*	*Good*	*Average*	*Below Average*	*No Chance To Observe*	*Responses*	*of Teacher Estimates*
1. Work Habits	59	25	6	0	0	90	3 superiors
2. Leadership Ability	35	40	11	2	2	90	1 superior 1 good 1 no chance
3. Ability To Get Along with Young People	53	28	5	0	4	90	1 superior 1 good 1 no chance
4. Ability To Get Along with Adults	61	21	3	1	4	90	1 superior 1 good 1 no chance
5. Speech Skill	36	40	12	1	1	90	1 superior 1 good 1 average
6. Personality	41	40	9	0	0	90	3 good
7. Character	68	20	2	0	0	90	3 superiors
8. Probability of Success as a College Student	56	28	5	5	1	90	3 superiors

More than two thirds of the teachers responded to the request for comments regarding potential of the trainee as a secondary-school teacher. Many of the comments were longer than might be expected from busy teachers at a particularly busy time of the year. The comments were characteristically favorable; for example, "_____ is a boy of excellent ability with excellent work habits. As a teacher I know that he would be very conscientious, always well prepared and willing to work. He takes suggestions particularly well. _____ should be a teacher of high caliber." There was an occasional indication of a trait that needed improvement; for example, "_____ is very much an extrovert at times and will go to great lengths to be the center of attraction."

Thirty-four of the responses indicated that the trainee had good probability of success as a teacher. Thirteen teachers commented on dependability in school tasks. Nine teachers wrote about the pleasantness of the trainee. Eight teachers made reference to home problems of the trainee such as divorce, finances, large family, discouragement from college, drinking in the home, or physically disabled parents or siblings. Several spoke of unusual initiative, interest in school, genuine interest in teaching, interest in a particular school subject, being "deserving of a scholarship," involvement in church activities, responsiveness to suggestions and leadership, and sense of humor. One teacher went so far as to say, "If we canot take a chance with _____, I would be very hesitant to make another recommendation in the future."

The school nurses' reports on individual trainees shown in Table III indicated that none had such serious health problems as to justify further investigation by the Project Advisory Committee. The most common problem is visual limitation; in all these cases trainees wear corrective lenses.

In the trainees' analyses of their own health, twenty-nine considered themselves to be in good health. Trainees reported the following serious illnesses or surgery: pneumonia—3, osteomyelitis—1, rheumatic fever—1, lung congestion—1, appendectomy—1, hernia—1, throat infection—1, scarlet fever—1, poliomyelitis—1.

TABLE III. Summary of Health History and Health Status Reported by School Nurses

Number with no health problems	19
Number with visual problems	5
Number with allergy conditions	2
Number with postural problems	2
Number overweight	1
Number with hearing problem	1
Total number of trainees	30

The majors and minors tentatively selected by the trainees correspond somewhat favorably to curricular areas of teacher shortage in St. Paul. The trainees discussed these selections with their school counselors and with a representative of the Project Advisory Committee.

The thirty students are distributed among five colleges and universities. The University of Minnesota (6 students) is a state-supported land-grant college and has one of the largest enrollments of any university in the United States. Hamline (10) and Macalester (8) are private, liberal arts colleges affiliated with Protestant churches. St. Thomas (4) is a Roman Catholic college for men. St. Catherine (2) is a Roman Catholic college for women. Each of these colleges has a representative on the college advisory committee that works with the Project Advisory Committee.

Eighteen of the trainees are young women and twelve are men. This ratio corresponds to the ratio between the sexes within the original fifty-four applicants.

Table IV shows the central tendency among the trainees in gross family income to be between $4,500 and $5,000 per year with four in the family. Some trainees come from families of great financial distress. Several families are encumbered with extraordinary financial obligations as the result of health problems in the home. Most trainees have been partially self-supporting for two years or more. In some cases, gross family income is the composite of the incomes of two or three wage earners.

TABLE IV. Gross Family Income and Number in Family Living at Home

Income	*Number in family at home (family size)*									
	1	2	3	4	5	6	7	8	9	10
0 to 499										
500 to 999	1									
1000 to 1499										
1500 to 1999										
2000 to 2499			1	1						
2500 to 2999									1	
3000 to 3499										
3500 to 3999			1	1						
4000 to 4499			2	1	1	1	1			
4500 to 4999				4	1					
5000 to 5499				2	2	2	1			
5500 to 5999			1	2		1				
6000 to 6499										
$6500 to 6999				1			1			

All but one of the public secondary schools of St. Paul had one or more of its graduates selected as a teacher trainee (see Table V). One of the conditions of the award was that the young person reside in St. Paul; however, he was free to attend the secondary school of his choice. Minnehaha Academy is located in Minneapolis, but the trainee resided in St. Paul and commuted to the private school. The number of awards given to graduates corresponds approximately to the ratio of three awards to 200 graduates in the twelfth-grade class. Variations are attributable to local circumstances.

Table VI shows very clearly that the trainees have been very active people in the extraclass activity programs of their respective schools. Fifteen trainees had part-time jobs, two full-time, and three participated in on-the-job training programs. In some cases, those who studied the records wondered how it was possible for a young person to expend so much time and energy in an extraclass activity program and still achieve an outstanding academic record. Certainly this is evidence of the boundless energy and enthusiasm of youth.

TABLE V. Trainees' High Schools and Size of Twelfth-Grade Class in 1957

School	*No. of Trainees*	*No. in Twelfth-Grade Class*
Central	5	457
Harding	3	260
Humboldt	4	223
Johnson	3	350
Mechanic Arts	6	205
Minnehaha Academy	1	109
Monroe	3	186
Washington	2	176
Wilson	3	195

TABLE VI. Extraclass Activity Participation by Trainees in 1956-57

Number of Trainees	*Number of Activities*
1	1
1	2
5	3
4	4
1	5
18	6+

The types of extraclass activities popular among the trainees are noted in Table VII. Other activities with four or less participants include: International Relations Club, cheerleading, Girls League, Monogram Club, Boys' State, intramural sports, Nurses' Club, Camera Club, Chemistry Club, Rifle Club, Junior Academy of Science, Library Club, instrumental music, exchange student, National Honor Society, Job Training Club, debate, National Forensic League, Speech Club, Quill and Scroll, and Girls' State.

TABLE VII. Extraclass Activity Participation by Trainees

Activity	*No. of Trainees*
Future Teachers of America Clubs	13
Girls Athletic Association	13
Student Council	11
Vocal music organizations	9
Yearbook staff	9
Junior Red Cross	8
Language Club	7
School Paper	7
Pep Club	7
Interscholastic sports	6
Dramatics	6
Class office	5

TABLE VIII. Out-of-School Activity Participation by Trainees

Activity	*No. of Trainees*
Church youth group	15
Junior Achievement Club	7
Church school teacher	6
Church choir	5
Y-Teens	4
Hi-Y	3
Church accompanist	2
Job's Daughters	2
Scouting, Campfire, Y.M.C.A.	6

Trainees have sought to be identified with institutions for character education and spiritual development.

The array of hobby and leisure time interests is drawn from the prestige interests in our culture. Other activities mentioned one or more times were: painting, drawing, camping, traveling, record collection, astronomy, dancing, correspondence, photography, scrapbooks, instrumental music, skating, cup collection, embroidery, magic, coin collection, evening college study, chess, speech work, baby sitting, and crafts.

TABLE IX. Reported Hobby and Leisure Time Interests of Trainees

Activity	*No. of Trainees*
Reading	17
Sports	12
Piano	7
Sewing	5
Bowling	4
Music	4
Singing	3
Swimming	3
Hunting and fishing	3

TABLE X. Work Experience of Trainees

Work	*No. of Trainees*
Stock clerk	9
Sales clerk	9
Office work	9
Janitor	3
Youth leader	3
Cashier-buyer	2
Cashier	2
Grocery carry-out porter	2
Newsboy	2
Hospital work	2

Many trainees have assumed important work responsibilities despite their youth. Additional employment mentioned once, include: trucking, telephone operator, postal work, resort waitress, library work, carpentry, meter reader, berry picker, interviewer, and I.B.M. machine supervisor.

TABLE XI. Leadership Experience Reported by Trainees

Responsibility	*No. of Trainees*
Club officer	18
Youth group leader	10
Organization representative	8
Church school teacher	6
Teacher assistant	6
Church youth group officer	4
Junior Achievement Club officer	4
Class officer	3
Community center helper	3
Student Council officer	2
Team captain	2
Camp counselor	1
Junior choir director	1

Preceding tables have indicated the breadth and volume of activity experience of the trainees. They have been unusually active in school and community activities. The trainees have assumed important work responsibilities. As a group, they stand well among their peers.

TABLE XII. Strong Vocational Interest Inventory Verification of Secondary-School Teachers in a Particular Curricular Area

Interest	*No. of Trainees*
Confirmation of secondary-school teaching and curricular area	22
Confirmation of secondary-school teaching	4
Confirmation of curricular area	0
Neither teaching nor area confirmed	0
Reports not available	4
Total	30

TABLE XIII. Kuder Preference Record Verification of Secondary School Teaching in a Particular Curricular Area

Preference	*No. of Trainees*
Confirmation of secondary-school teaching and curricular area	17
Confirmation of secondary-school teaching	4
Confirmation of curricular area	8
Neither teaching nor area confirmed	0
Reports not available	1
Total	30

Analysis of measured interests in secondary-school teaching in particular curricular areas indicates consistency with stated interests of trainees shown in Tables XII and XIII.

The median profile on the *Minnesota Multiphasic Personality Inventory* of the eighteen female trainees shows the characteristic flatness of median profiles of selected normals. Those young people who have serious personality problems did not become members of the "selected eighteen." Though there was variance among the eighteen trainees, it was low.

These profiles were divided into three groups. Eleven were essentially flat with all scores between 40 and 60 on the t-scale. Six profiles exhibited elevations on the fourth scale; one of these was accompanied with an elevation on the ninth scale, and another was accompanied with an elevation on the third and sixth scales. One profile displayed elevations on both the fifth and ninth scales. None of the elevations was considered serious by the Project Advisory Committee after consulting other sources of evidence pertaining to personality available to the Committee.

The profiles for the twelve males also showed a flatness which may be attributed to the selection of normals. Variances were low. These profiles were divided into three groups for descriptive purposes. Nine of the profiles were essentially flat. Two profiles had elevations on the ninth scale. One profile exhibited elevations, though not serious, on the third, fifth, eighth, and ninth scales.

Mr. Doane interviewed forty-six applicants. Ratings were made of the performances of the trainees in the interview; eleven years of experience in counseling college freshmen was used as a norm or basis for comparison in making the ratings. The subjectivity was reduced somewhat through the tapes made of each interview and transcriptions of each tape.

Nearly all of the trainees made an impression typical of college freshmen in the interview. Indeed, two or three trainees responded in a manner comparable to college seniors. A summary of the data is shown in Table XIV.

TABLE XIV. Summary of Interview Performances

Factor	*No. of Trainees' Ratings*		
	Above Ave.	*Average*	*Below Ave.*
1. Insights on own objectives and objectives of the Teacher Recruitment Project	11	14	5
2. Verification of interest in secondary-school teaching	9	19	2
3. Poise, sincerity, maturity	9	17	4
4. Oral expression, quality, and mechanics	10	13	7
5. General impression of over-all performance in interview	9	16	5

The self-estimates shown in Table XV made by the trainees correspond to the estimates of the trainees made by their teachers. The self-ratings were consistent with some of the findings of the interviews with each of the trainees. The traits of high rank are those generally thought to be important in teacher selection.

The majority of trainees come from homes where the major wage earner is either semi-skilled or skilled in a trade (see Table XVI).

The median educational level of fathers and mothers shown in Table XVII is some high-school training.

Analysis of the educational histories of the trainees indicates a moderate amount of moving from one school to another. All but one trainee is a graduate of a public secondary school of St. Paul; the exception is a graduate of a private, church-affiliated school in Minneapolis. Seven attended private or parochial elementary schools in St. Paul. Twelve attended elementary schools outside of St. Paul for one or more years. Six attended a secondary school outside of St. Paul.

TABLE XV. Trainees Self-Estimates on Personality Traits

Trait	*No. of Trainees*	*Trait*	*No. of Trainees*
1. Dependable	28	15. Kindly	11
2. Friendly	27	16. Quiet	10
3. Courteous	25	17. Stubborn	9
4. Cooperative	24	18. Tactful	8
5. Neat	23	19. Nervous	5
6. Obedient	22	20. Moody	4
7. Self-confident	21	21. Hasty	2
8. Hard worker	21	22. Bashful	2
9. Punctual	21	23. Easily discouraged	0
10. Patient	20	24. Tires easily	0
11. Cheerful	18	25. Stammer	0
12. Alert	17	26. Jealous	0
13. Calm	16	27. Unhappy	0
14. Easy going	13		

TABLE XVI. Occupation of Major Wage Earner of the Family

Occupation	*No. of Trainees*	*Occupation*	*No. of Trainees*
1. Clerical	4	14. Machinist	1
2. Carpentry	3	15. Switchman	1
3. Truck Driver	1	16. Estimating Engineer	1
4. Hospital Employee	1	17. Interior Decorator	1
5. Sheet Metal Worker	1	18. Car Painter	1
6. Minister	1	19. Laborer	1
7. Factory	1	20. Stationary Engineer	1
8. Investment	1	21. Head Operator	1
9. Stereotype	1	22. Grocery	1
10. Salesman	1	23. Homemaker	1
11. Chemist	1	24. Electrician	1
12. Fireman	1	25. Disabled	1
13. Boiler Engineer	1		

Summary of Characteristics of the Thirty Trainees

The Project Advisory Committee collected a large amount of information about each applicant for a scholarship grant before selecting the thirty young people to whom awards were given. This thoroughness was justified on the grounds that the ultimate success of the five-year project experiment in teacher recruitment and teacher education would be more nearly assured if the finest available young people were given the opportunities of serving as teacher trainees.

The data presented verify the qualities that the Project Advisory Committee sought. Information drawn from tests, educational records, health records, estimates of teachers, interview reports, and from materials provided by the applicants testifies to the extraordinary qualities that these young men and women bring to the Teacher Recruitment

TABLE XVII. Educational Level of Father and Mother

Educational Level	*No. of Trainees*	
	Fathers	*Mothers*
Grade 6	2	2
Grade 7	0	0
Grade 8	2	1
Grade 9	0	1
Grade 10	3	2
Grade 11	1	0
Grade 12	4	5
High school, no grade reported	9	14
One year college	1	0
Two years college	3	1
Three years college	0	0
Four years college	0	2
College, no years reported	3	1
No educational level reported	2	1

Project at the outset. They are bright, have done well in their school studies, have mastered important information of our culture, are in good health, well adjusted, genuinely interested in teaching in the secondary schools, and have impressed their peers and their teachers favorably. They are not financially wealthy, nor are they college graduates—yet.

The Project Advisory Committee is justifiably proud of the group and expects each trainee to evolve into an unusually qualified secondary-school teacher. Although the Committee expects the attrition within the group to be nominal over the next five years, steps have been taken to make replacements of trainees when conditions warrant such action.

Summary Accomplishment to August 31, 1957

1. Thirty trainees have been selected, five alternates have been chosen.
2. Thirty trainees' college programs have been planned for the academic year 1957-58 and their programs have been tentatively planned for the five-year period.
3. Thirty trainees have been at work in approved summer employment jobs; in addition, each was gaining valuable experience in working with youth on such assignments as youth groups at YMCA and public playgrounds. In one or two instances, the experiences were less formal and dealt with experiences in the home with younger siblings where the mother was the bread winner.
4. Seminars for the academic year 1957-58 have been tentatively planned.
5. A two-day workshop was held August 28 and 29, 1957, for forty prospective project teachers to clarify the role they will play and speculate on experimentation in the years ahead.
6. The Project Advisory Committee in its meetings has formulated the general policies that will guide the administration of the project.
7. The College Advisory Committee met three times and arranged general plans for the trainee program. In addition, the individual members have met the individual trainees and counseled with them concerning their programs.

Workshop Summer 1957

Forty classroom teachers attended a workshop on August 28 and 29, 1957. These teachers, chosen by their principals the previous spring, represented the fields of mathematics, science, language arts, instrumental and vocal music, and home economics. Considerable enthusiasm was displayed for the St. Paul Teacher Recruitment Project. Much time was spent on discussing what the project teacher could do for the trainee. Many suggestions were made concerning the training program for the year 1957-58, and for the two or three years later. The suggestion was made that, during the first year, the trainee observe widely and that his program include observations not only in his major and minor subject fields, but also in areas entirely unrelated. It was felt the trainee should observe in many buildings and in many different areas. Another point stressed was the idea that teachers should try to arouse and stimulate further an enthusiasm for teaching. By the beginning of the second year, 1958-1959, it was felt the trainee should get into the high school at the opening of the school year and observe teachers "around the clock" so that he may get a feeling of a genuine school situation. During the second year, a number of groups in the workshop suggested that the trainee should spend one report card period (approximately ten weeks)

Teacher-trainees in the St. Paul recruitment project discuss college plans with a counselor from St. Thomas College, St. Paul, Minnesota.

with the same teacher, in this way, he would spend his observation time with four teachers during his second year. There was a feeling that the work for the third, fourth, and fifth years should remain flexible at this time. The members of the workshop urged that workshops be held each summer.

Plans for 1957-1958

Plans have been laid for a series of approximately thirty-six seminars; one week each. The trainees will make field trips to the various junior high schools where they will begin to get an understanding of the junior high-school adolescent and his school. They will meet the personnel of the building and begin to appreciate the purposes that a modern junior high school serves. Following the field trips, the trainees will observe in many classrooms in the junior high schools in keeping with the recommendations of the members of the workshop. Keeping in mind that the trainee will spend two hours each week in the classroom and one hour in the seminar during 1957-1958, he will receive in excess of one hundred hours of educational training outside of his college program.

Evaluation Procedures

A subcommittee on evaluation criteria and procedures was initiated. The subcommittee has discussed: (1) the need for evaluation in the Project; (2) definition of primary concern with trainee growth and the experiences of the trainee; (3) evolutionary character of evaluation in the Project due to its complexity; and (4) criteria for admission to the second year as a trainee, including achievement testing, college records, reactions of project teachers, anecdotal records of trainee performance, participation in seminars, "better than average" work in college, field work as a trainee, and extraclass activities.

Dr. J. Lloyd Trump, Director of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, suggested the Committee pay close attention to the objectives of the Project to determine appropriate evaluation procedures. He suggested formulating hypotheses also in teacher education for testing. A control group of students in the "traditional" teacher education program might be identified and followed closely for comparative purposes. Recruitment, teacher education, and redeployment of the use of teacher time are all important aspects of the St. Paul Project and will have to be considered in evaluation procedures.

CHAPTER IX

A Variety of Improvements in Staff Utilization Are Tried in a Small High School at Beecher, Illinois

BERNICE BAMMANN
JOHN FRENCH

MUCH has been said and written about the critical problem of securing and retaining teachers in the small schools of rural communities. The small community high school in Beecher, Illinois, proposed to do something about it. The following article relates what happens when students, parents, and faculty band together to experiment with various methods for improving staff utilization.

In small schools, the variety of tasks each teacher is required to do and the long hours required to complete the tasks are especially burdensome. Salaries are also likely to be relatively lower and living conditions somewhat less attractive, especially for younger teachers, than in larger, more urban communities. At the same time, parents and youth in the smaller communities expect educational opportunities comparable with those in larger places. The migration of young people to urban places from the rural areas makes this requirement of comparable educational opportunities even more important.

What can be done to make teaching more attractive in small rural schools? How may educational opportunities be provided for the youth and adults in small communities? What improvements may be made in the utilization of the present staff? What effects may proposed improvements in utilization have on securing and retaining teachers in small communities? What effects will these changes have on the students? These were some of the problems to be considered in the experimental program.

STEPS TO BE TAKEN IN THE STUDY

From the beginning, a strong public relations program to inform and interest the community was carried on through the PTA and other community groups. The newspapers carried pictures, explanations, and progress reports from time to time. After preliminary discussions, and with the approval of the board of education, interested parties suggested that more specific plans for the study be made in a three-day workshop

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to be held prior to the opening of school. Junior and senior high-school teachers, as well as representatives of the board of education, students, and adults of the community, were invited to participate in the workshop to discuss various approaches to the experiment. The field was open for suggestions. Consultant help from other schools, higher institutions of learning and the State Department of Public Instruction was available as needed. Arrangements were made for teachers to visit other schools. Plans were made for careful evaluation of the effects of the changes and for periodical progress assessments.

The board of education proposed to pay salaries of non-certificated personnel to be employed and also assist in the purchase of normally used materials of instruction. However, if experimentation beyond the ordinary was to be engaged in, outside support was necessary. Superintendent of Schools John H. French and the board of education requested through the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School financial and advisory assistance in carrying on the proposed study. The assistance was granted and a budget set up.

Areas Selected for Experimentation

A democratic procedure was followed in conducting the workshop meetings. The problems were discussed and studied democratically in the three-day workshop, as well as in subsequent committee work. The group felt that a more efficient utilization of teachers' energies would result in a more effective and satisfied staff. With this in mind, it was proposed that the teachers be given not only an abundance of instructional aids, but also paid lay help and unpaid student help. The following definite proposals were made, requesting the use of:

1. A non-certificated librarian who would work under the supervision of trained personnel from an accredited library school in order to provide the school with the best possible library services despite the present handicap of not being able to employ a qualified librarian.
2. A tape recorder in shorthand and typing classes, whereby the teacher would tape instructions and exercises.
3. A tape recorder in music classes and with ensemble groups to substitute for demonstration by the teacher, and also for diagnostic purposes.
4. A tape recorder in a German class taught by a teacher with a minimum of preparation in the language to assist in pronunciation.
5. Students as cadet teachers in physical education and in homemaking to lighten the teacher's load and at the same time to offer opportunities for experiences that will encourage students to enter the teaching field.
6. A portable loud speaker for field trips, shop work, *etc.*, in vocational agriculture.
7. A tachistoscope along with other instruction aids to determine if a teacher with a full class load can achieve satisfactory results in the improvement of the reading of his students without loading himself more heavily.
8. Student clerical help to relieve the teacher of clerical duties.

Framework

During the workshop meetings, the experimental program began to take shape. There was little difficulty in selecting the areas for experimentation. The pupils, teachers, and parents involved seemed to have received the old "shot in the arm" and all were eager to get started. However, the reader should not be misled into believing that everything concerning the Beecher Experiment was "goodness and light"! After the period of initial exhilaration, there followed what was probably the darkest period in the whole study.

The group did not feel the experiments should be put in motion until definite plans for evaluation were made. They realized that many of the things they proposed to do were not new; however, they were not always convinced of the reliability of experiments conducted where controls were not evident. The group realized that much of the value of the program would be in securing sufficient proof or disproof of the assumptions basic to the experimental design.

Status Study Made

In order to evaluate any changes that might take place at Beecher, an initial and terminal status study was agreed upon by the staff and the assistance of a consultant from Northern Illinois University was procured. For purposes of a status study, three areas were examined: (1) staff morale, (2) distribution of staff time, and (3) curriculum.

Staff morale was examined in two ways. *First*, an unstructured, open-ended questionnaire was distributed among the high-school staff asking that they (1) list those things which they felt were good about their present position and explain why, and (2) list those things which they did not like about their present position and explain why.

Second, a structured questionnaire was designed to cover the areas mentioned in the responses of the unstructured questionnaire. The structured form was distributed to the faculty of Beecher High School and to the high-school faculties of three schools that: (1) represented a school situation and location comparable to Beecher, (2) represented a school situation and location different from that of Beecher, and (3) represented a school situation different from Beecher, but similar in location. All of the areas were primarily rural, with agriculture being the main industry.

The responses to the unstructured questionnaire, which revealed faculty thinking and feeling, centered around the areas of community, physical plant, administration, faculty, and professional aspects at Beecher. Comments and recommendations were made as a result of the analysis of the responses. Consideration would be given in the group to those recommendations which might be incorporated in the experimental program.

Beecher Compared with Three Other Schools

The evaluation of staff morale was compared with three other schools through an analysis of the structured questionnaire. Several interesting findings were revealed.

The morale of the Beecher staff is the highest of the four schools compared. The reasons seem to constellate around the enjoyment of faculty members and the faculty social life, the pleasant working facilities and environment for carrying on work, the maintenance help, the space to work, more adequate library facilities, audio-visual materials budget, and having a supply of supplementary materials. The Beecher library program, which was initiated at the beginning of the project, is apparently highly successful and is also contributing to morale. Beecher shows the lowest morale concerning extraclass activities. There is apparently no objection to having them. The problem seems to be centered more around their interference with classes and the lack of adult help for certain activities.

Time Study

Each staff member of Beecher High School kept a record of a complete week of work, including after-school, night, and week-end time that might be used in relation to the teaching position. The time sheets were divided into 15-minute periods with freedom to arrange and change as desired or necessary. The results were tabulated and classified. They indicated a number of things:

1. The major portion of time was spent in classwork-teaching, discussion, *etc.*
2. There were varying amounts of time spent on preparation—five per cent to twenty-eight per cent.
3. There were varying amounts of time spent on extra help to students—two per cent to eleven per cent.
4. As would be expected, time varied for grading papers and supervised study time according to the class and the subject.
5. Nine out of the twelve teachers have a study hall. It is one period a day, and takes about eight per cent of the time.
6. Only two people were involved in hall and lunch duty, and it took one per cent of one's time and three per cent of the other's. This is interesting in light of the feeling toward the duty.

The teachers met in small groups with the consultant and discussed the time schedule. There was a feeling that:

1. More time might be spent in preparation.
2. The time wasted in waiting for pupils to change gym shoes, *etc.*, might be studied.
3. The time consumed on repairing of equipment and band instruments might be examined.
4. The crowded time schedule of the music teacher should be relaxed so that there are at least ten minutes between classes.
5. There should be more time for professional work.
6. The time taken from classwork for extracurricular activities should be examined.

Curriculum

Each teacher made an outline of curriculum with the purpose of setting down what was being taught in the various subjects. The outlines were duplicated and were distributed to each member of the staff. It was noted that there was a good deal of repetition in different subjects. For example, letter form was stressed in typing and in English. It was noted that there was a treatment of areas in one subject which might better be taught in another subject. For example, conservation is in social sciences, but, in the light of recent trends in vocational agriculture, might better be taught in a general agriculture course. It was noted that the English literature course would be focusing on one century while history would be focusing on another. The inefficiency of this kind of course organization was recognized by the staff. The staff further recognized that sound principles of learning suggested that approaching one period or one problem from many courses would tend to relate interests of students' studies, tend to motivate them by a multiple approach, and would tend to guarantee a longer retention of what was studied and learned.

The teachers discussed with the consultant the possibility of correlating subject matter to a greater degree. It was suggested that time needed to be set aside to explore further the methods and goals of such integration.

After the aforementioned groundwork was laid, the selected experiments were put in motion. The second semester was well underway before some of the experiments could be started. At the end of the school term, data that had been collected were reported and each phase of the program was evaluated in terms of the students, the teachers, and, in some cases, the parents and the community. These evaluations were by no means complete or final as the study is to be carried on for at least another year.

Progress and Findings of Library Experiment

Problem Identified

The library experiment grew out of a desire to provide good library services for students and staff. The problem was to determine how to provide the best library services possible to students and faculty of small high schools when an accredited librarian was unavailable. In August 1956, an acting librarian was employed. Later in October, an instructor from a nearby accredited library school was employed to work directly with the acting librarian. This instructor is known as the professional counselor throughout the study. Since it was late in the school year, 1956-57, before the experiment started, it was decided to carry it on through the following year, 1957-58, with the professional counselor visiting the school and guiding the work.

Two main factors for testing seemed evident at the beginning: (1) improvement in library service to students and faculty, and (2) type and order of library science instruction to be given to this untrained, acting

librarian who was working and receiving training concurrently. Many other areas of the study would appear, but these two will be watched carefully and reported upon in the final statement.

Procedures

A survey of library facilities was made. The library was found to be particularly low in pure and applied sciences, literature, and history. Reference books were rather meager in number. Audio-visual materials were scattered throughout the building.

By the last week in March 1956, enough materials had arrived so that the eighth-grade students could be taught to use library tools effectively in a unit on careers. By moving the study hall to another room, the whole class could be brought in and taught by the professional counselor. In May, the seventh-grade class studying a science unit and two social studies classes, which included the sophomores and some juniors and seniors, were taught how to use library tools. Other units were planned for instruction, but time did not permit giving lessons.

Late in May, the counselor spent two days with the librarian, teaching how to take inventory, how to make a simple form of a budget and bookkeeping system, how to make an annual report, how to discard unsuitable materials, how to choose reference books urgently needed for the fall semester, and how to plan for the training of a student-librarian staff.

In the beginning of the study, November 1956, and during May 1957, the librarian had collected data showing use of materials and evaluations of the library services from both faculty and students. The following results were reported:

A. *Collection*
   1. Both students and faculty are pleased with additional books made available during this short time.
   2. Filing, purchasing, and reorganization of materials have been improved.
   3. Collection of books and magazines is still inadequate for many units.

B. *Equipment*
   1. The purchase of a phonograph with earphones, reading accelerators, and tachistoscopes have been heartily approved.
   2. Increase in shelving space and reorganization of equipment have been desirable.

C. *Services of library*
   1. Desire for extended services indicated.
   2. Insistence that the study hall be moved from the library was unanimous.
   3. Greater use of library facilities indicated.

D. *Uses of library materials—data based upon a ten-day period at the very beginning of the study, November 1956 and another in May 1957*
   1. Book circulation for use outside the library jumped from 100 in November to 148 in May.
   2. Books used in the library went up from 61 to 137 with a range in each week from one to 14 books per day in November to six to 27 books per day in May.

3. Newspapers went down from 10.9 per day to 7.3 per day. This may have been due to the fact that other materials were needed and used for assignments.
4. Pamphlets used jumped from 1.8 per day to 8.9 per day. No doubt this increased use came from demands of the class having been taught how to use the library.
5. Dictionary use decreased one point.
6. Use of encyclopedias rose from 53 to 163. Limited reference materials and numbers of books available could force the students to increase use of encyclopedias.
7. Magazine usage went down from 25.8 per day to 16.1 per day. There is an interesting factor in this situation, for the first data were taken mainly from current issues used in the library for pleasure reading. The second data were based upon use for reference purposes with the *Abridged Reader's Guide*.
8. No recordings were available for use during the first period—11.4 per day were used during the period in May with a range of 4 to 19 per day.
9. Six to eight students per day were using the reading accelerator during the second period.

Books, pamphlets, and encyclopedias show the greatest increase in use. This fact would also show that the card catalog and the pamphlet file were being more thoroughly understood. Faculty cooperation and interest is high. Even at this early midway evaluation it is quite evident that the library experiment is well on its way to success.

Tape Recorder Experiment

Much enthusiasm was attached to the use of the tape recorder in the classroom. The enthusiasm and desire to participate spread to other teachers as time went on. In the original proposal it was to be used in shorthand and typing classes, music classes, and German class. Before the end of the year, the eighth-grade spelling class, senior social studies, and speech class were also using it quite extensively.

Both the objectives and the use of the tape recorder varied, depending on the subject and teacher. While nearly every teacher had the objective to save time, there seemed to be the feeling that there were other objectives which were equally important: (1) to supplement printed materials, (2) to bring in help from outside sources, (3) to take the place of another type of instruction, (4) to teach more effectively, (5) to analyze teaching, and (6) to analyze student work.

As might be expected, this program had its problems and disadvantages. Some of these problems were finding time to record, getting the use of a machine, operating difficulties, splicing tapes, wasting time in "setting up," weight of machine, finding sources of prerecorded tape, and students' understanding purpose of use.

Even though one teacher thought it took a lot more of her time, her enthusiasm for the recorder was not dampened. She stated, "I think it gives classroom teaching a whole new aspect. Recording purposefully

and listening creatively are important in helping the student gain a responsibility and an interest in his own education."

The students were highly motivated by this form of learning. It was felt that they benefited by listening more conscienciously and intently, by being aided in review work, by having opportunity for more independent work, and by receiving and retaining a wider knowledge.

This experiment like many of the others was late in getting started, due to slowness of organization and arrival of equipment, not enthusiasm.

Cadet Teachers

Another part of the experimental program involved the use of high-school students as cadet teachers. The objectives were to lighten the teachers' load and at the same time offer students opportunities for experiences that would encourage some to enter the teaching profession. Six students were used to assist with boys' and girls' physical education classes and one student was used in homemaking.

Three steps were followed in the program: (1) to select capable students who show an active interest in the program; (2) to assign tasks within their regular classes that will increase their knowledge of the field and at the same time give them an opportunity to assist in the direction of students; and (3) to evaluate the experiment by questionnaires given to cadet teachers, classroom students, and teachers involved.

In physical education classes, the students assisted with the equipment, and, under the supervision of the teacher, taught some of the activities. The work in homemaking class provided experiences in assisting with laboratory classes, the home program, demonstrations, making and using illustrative material, audio-visual aids, and similar tasks.

Some of the benefits that students listed in their evaluation included developing leadership and cooperation, and realizing the responsibilities of a teacher. All students stated that they understood the teacher's job better. All but one student felt a sense of accomplishment after being an instructor's assistant. Two students stated that occasionally this program interfered with their study time. Two students also listed that the thing they disliked was the uncooperativeness of the classes with which they assisted.

When asked if this experience had an influence on their desire to become teachers, two out of the seven stated, "No." Others said, "It has made me surer of my decision." "It has heightened my desires to teach." "It has given me a better outlook toward it."

Portable Speaker

Originally the agriculture teacher proposed to use a portable loud speaker in vocational agriculture. The objectives were to improve instruction and to take less of the teacher's energy. It has been used by the teacher in the following ways: (1) to speak to the boys while on farm

field trips, (2) to point out things of interest concerning soil conservation while the bus was passing fields, ditches, streams, *etc.*, (3) to give instructions as boys worked on field plots, and (4) to direct shop work.

The reactions from the students were very good. They could hear better on field trips. The instructor noted that they listened more attentively to instructions.

The enthusiasm for this project spread to other departments. The speaker was used by the band instructor for marching band and by the coach for track meets. However, since the equipment did not arrive until spring, the teachers feel that more time is needed before an evaluation is made.

Reading Program

An experiment was proposed to determine whether an English teacher with no specific training in reading could carry on an effective reading program in addition to the teacher's full class teaching load. Instructional aids such as the tachistoscope, reading accelerator, and reading tests were to be used. The teacher involved set up a program of study with these special aids, giving periodic tests to determine growth in reading skills.

After a period of six weeks, the teacher stated that a relatively inexperienced English teacher with no specific training in reading could not carry on an effective enough reading program in addition to the full class teaching load. While he stated it was effective, he felt it was not sufficiently effective, adding that only trained people who know exactly what they are doing and are interested in teaching reading should do so. However, he found the students enthusiastic and the tachistoscope and reading accelerator were extremely helpful as motivators. The teacher felt the students were sincere, interested, cooperative, diligent, and helpful in operating the equipment. The teacher also felt that work with the tachistoscope definitely stimulated interest in learning and increased the eye span, thereby helping the student to increase his reading rate. The final diagnostic test indicated that all students improved their reading rates—some remarkably. The increases in words per minute according to the diagnostic tests ranged from a high of 152 words to a low of 10 words. All but two students improved their comprehension. However, one of the students who did not improve his comprehension made a 100 word a minute increase.

Whether similar reading programs can be offered as the solution to small high-school reading problems remains to be seen. The Beecher group intends to explore further the possibilities.

Student Clerical Help

The student clerical program was developed for two reasons: (1) to provide opportunities for valuable experiences for students, experiences that would help develop responsibility, personality, clerical skills, better

work habits, and better pupil-teacher relationships; and (2) to relieve teachers of clerical duties so that their time might be used in more professional ways. General requirements for student clerks were set up by the faculty. The teachers indicated student jobs which were then made available to the students by means of a specially created Want Ad section in the school newspaper. The students applied for the jobs by filling out applications. The teachers interviewed the applicants and engaged the person they felt would do a good job as well as benefit from the experience. The students were not paid, but received points to be added to the extracurricular activities point system. An adviser was selected to serve as a clearing house for any employer-employee problems that might arise, to check on progress, and to organize the evaluation of the clerical program.

At the end of the year, questionnaires were answered by both students and faculty. All ten of the students involved in this program liked their job and their teacher employer. Students and faculty members both indicated that they would like to participate in the program again. All but one teacher felt the student helper saved time. Two teachers

A high-school assistant gives a demonstration to a freshman home economics class in the Beecher, Illinois, High School.

indicated it took a lot of time to teach the job to the student. The teachers felt the students benefited by: (1) learning to work with very little instruction, (2) experiencing employer-employee relations, (3) having on-the-job experience, (4) learning clerical and office experience, (5) learning more about the teaching profession, and (6) having the opportunity to use their own initiative. The students felt they benefited by learning to: (1) cooperate with others, (2) do jobs without being told twice, (3) recognize what employers expect, (4) file records and materials, (5) not be afraid of their employers, and (6) write letters for employers. The students did not feel that clerical jobs interfered with their extra-class activities or their grades. Suggestions were given for improving the program next year.

Total Outlook

While the complete evaluation and the post-status study have not yet been made, some benefits of the experimental program have become evident. The study will continue for another year and a total evaluation will be made at a later date. Students, faculty, and community seem highly interested in the experimental program and have contributed time toward it. High morale among the teachers seems to exist since all of them wanted to continue the study.

No one left his position because of the experimental program. The three teachers who left their posts this year did so because of military service. Their replacements indicated considerable interest in working with the experimental program.

A careful financial accounting has been kept of all expenses incurred in the purchase of instructional aids and supplies that are related to the program as well as the cost of the additional clerical assistance. This expense has not been excessive in the light of what seems to be a better utilization of the teachers' time. However, a more definite conclusion awaits in the final evaluation of the program.

Early in July 1957, the Steering Committee met to discuss plans for a workshop to be held prior to the opening of school. The workshop lasted for two days with faculty, community, and consultant participation. The program of the previous year was reviewed and evaluated. Groups then worked to design new experiments and to reshape the old ones. All of last year's experiments will be continued with suggested improvements. The new projects are concerned with gifted students, community resources, and an all-grade developmental reading program. With an earlier start this year and the continued high interest in the program, a most productive program is anticipated.

CHAPTER X

Changes in Class Size, Teacher Time, and the Use of Electronic and Mechanical Aids Are Made in Snyder, Texas

C. L. YARBROUGH
WILLIAM O. NESBITT

DURING the past two years, the Snyder High School in Snyder, Texas, has been organizing to evaluate the outcomes of patterns of instruction in selected subject matter areas under two contrasting treatments. Much of this time has been spent developing technological teaching aids, practicing instructional techniques with various sized groups, securing recognition of existing problems, and gaining voluntary acceptance of the teacher's role in experimentation. Many hours have been spent in working with materials, planning in new ways, and sharing ideas with new people, professional and non-professional alike. Creative teachers have led themselves to the point where they truly want to find some of the answers to their most perplexing problems.

Administrators were led into a consideration of these problems as a result of comments made by curious teachers. Typically, they said:

If I had the time really to plan, I could do a better job of teaching and I'd be happier in my work, too.

It scares me to think about it, but I believe I could, if given time, reorganize my teaching methods and subject content in such a way as to instruct as many or more boys and girls in greater detail than ever before.

If I could find the time to spend with a student on a problem with which I know I could help him, . . .

If I could teach just the things I know in the way I want to, . . .

The teachers who made these comments were employed in a West Texas school. The problems they faced were the same as those with which many teachers have struggled; however, the teachers in Snyder have been trying to do something about them. Solutions to problems in Snyder would not be fully applicable to similar problems in other communities; however, the approaches being made by the Snyder teachers may be of value to other teachers in other communities.

There are at present 2,407 students in the elementary schools and 1,394 students in the junior and senior high school of Snyder, Texas.

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The 6-2-4 plan of organization is in operation at present. Future plans call for the adoption of the 6-3-3 plan. As in many other school districts, considerable increase in enrollment is anticipated. It is estimated that the enrollments in the junior and senior high schools will total 1,725 in 1960 and 1,985 in 1962.

The community, located in west central part of Texas, has experienced considerable economic and population growth in recent years because of activity in oil fields in the locality. Carefully planned management of the resources seems to point to a continued satisfactory economic situation. In addition to oil production, some cotton is grown and there is some livestock industry. Snyder is the county seat of Scurry County.

The senior high school is located in an attractive building constructed in 1952. Although the junior high school is in an older building, the plant is well maintained and additions have recently been completed. The curriculum includes the usual secondary-school subjects. Supplies and equipment are above average. Community support of the schools is excellent. About fifty per cent of the high-school graduates go on to college. The present salary schedule for teachers starts at $4,000 for a Bachelor degree with no experience.

Purposes of the Experimental Study

In answer to the questions implied by the teachers' comments, a project was designed to test promising ways of increasing teacher effectiveness, both quantitatively and qualitatively. Some teachers have been freed from the usual schedule in order to provide for more constructive planning and coordinating of learning experiences with relatively larger groups of students. Classes have been organized around the educational conference, design with teaching-learning experiences following a longer unit pattern. More than the usual use is being made of technological teaching aids, teacher-pupil planning, and community resources as they seem to adapt to certain content material in several subject matter areas. Teacher assistants are being used to relieve regular teachers of many administrative and preparatory duties. Classroom organization and the approach to learning have been designed to place emphasis on the acceptance of responsibility by the student.

Underlying the entire project is the desire to investigate teaching-learning problems closely associated with class size and individualization of instruction, more profitable utilization of teacher time, and the relative cost of mechanical and electronic teaching devices. The basic questions requiring answers are:

1. Can pupils learn more in large classes if teachers have more time for planning, are able to use modern technology in teaching, and are freed to work in small groups with individuals as the need arises?
2. Are teachers happier and more productive if they are given more time for making lesson plans to be presented in large classes, and does relieving the teacher from petty chores in other ways by secretarial assistance for purely clerical duties contribute to efficient teaching?

3. Is the money saved by the reduced number of teachers required by the large class sufficient to justify providing the necessary closed-circuit television, overviewers, and other mechanical aids?

This means, can the teacher's productivity be increased with her remaining happier and more effective without increasing the cost?

To facilitate the answering of these questions, data are being gathered under carefully controlled conditions. This information will include a list of the learning activities that go on in the classroom in terms of both teachers and pupils. Relative to students, it will include an estimate of the amount of learning of subject matter that take place. The interests, attitudes, learning skills, and other related factors are being measured.

Pertinent information is being obtained concerning what the teacher does in the classroom. Records dealing with costs, use of instructional aids, and morale and attitudes are all important sources of information.

Parent opinions are being collected concerning their own as well as student acceptance of the program. These attitudes concerning the educational growth of students will be valuable data which can be used to help answer several questions.

Evolution of the Program

In the beginning, teachers in the science department objected to repeating certain basic material five times daily. They also realized that each teacher was not equally endowed with the knowledge and interest in the various subjects dealt with in the science classes, particularly in general science. In addition, there was the problem of giving every student a good view of demonstrations. The teachers were encouraged to draw upon their imagination (and a special fund in the budget) to seek the answers.

The desire to introduce a firsthand study of the latest electronic devices into the science courses had already been discussed; therefore, it seemed natural to combine this desire for curriculum enrichment with the problem of providing every pupil with an equal opportunity to see for himself. Closed-circuit television apparatus was finally selected and installed and the first classes began the great "experiment." Actually, the first use of TV in the classroom was nothing more than the use of the camera's lens as an extension of the student's eye. Several receivers distributed around the normal sized classroom revealed close-up views of the object at the front of the room.

This worked very well from a technological standpoint, but problems began to arise. As the teachers and several selected students became more familiar with program production, it became apparent that too much space was needed for operation of the essential TV equipment. Besides, several students were observed paying too much attention to the TV programming instead of the program.

A conference involving the building principal, the science department, and representative students resulted in a decision to move the TV production apparatus from the classroom. This move was made to provide more flexibility so that the implications made by the following questions could be explored more fully. Why produce a lesson for just one normal sized class? Why not install receivers in several rooms and rework the schedule so all general science students could meet at the same time to receive the same program? Why not let all the science teachers plan and work together? To make the best possible program, why not select the best qualified person to give the one presentation of the subject under discussion?

Several problems dealing with money, parent approval, and the upsetting of tradition became obvious; however, the science teachers spent many extra hours installing the additional equipment, developing the technique of operating and producing TV lessons, and preparing those lessons which they quickly discovered required an expertness never before demanded in the classroom. While there was considerable community interest in the change, most parents were willing to depend on their school teachers and their school board for leadership.

In September 1956, the first classes got underway in general science and biology. Several groups of students receiving instruction at the same time in a subject were quickly named the "large" class, even though they may have been in several rooms or in one large room capable of seating a hundred or more. Classes of twenty-five students, more or less, operating in the normal manner, were designated "small" classes. Large classes broken into small groups became known as "activity" or "lab" groups.

These large classes were handled by teachers who worked cooperatively with each class at different hours. These same teachers were carrying additional classes to make a total normal student load; however, at times only one teacher was actually involved in each of the large groups. Three large classes are considered equivalent to five small classes as a teacher load, even though all teachers are involved in both large and small classes and work with other teachers in planning for the large groups.

General presentations to the classes as a whole typically occurred on an average of two days per week. The remainder of the time was spent by the students working in activity groups, in laboratories, field trips, individual conferences with teachers, library work, or in working on problems of one type or another.

The other experiment involved the combination of two sections in biology, making a class of approximately sixty students. The same general pattern as in general science was being followed. In both classes, instructors were trying a variety of techniques for working with larger groups of students and were developing new materials.

Teaching Principles and Techniques

It became apparent that techniques developed for small class instruction could not be used in the large classes without careful consideration and some refinement. Pupil participation in all its aspects became extremely pertinent to the successful operation of the large class. Projects on both individual and interest group levels became a must. Unit teaching over an extended period of time and subject area seemed to develop naturally. Increased use of research techniques in the laboratory and library became invaluable for teaching students of all levels, but especially students in the upper third of the class. The range of this latter group in terms of interest and ability was unlimited.

Students were encouraged to take as much individual responsibility as possible in as many different roles as could be delegated. The activity groups became the key to the successful administration of this type of classroom organization. They also came to be the key to the channeling of student interest into many productive learning situations. It was learned that activity groups were difficult to teach without adequate plans which anticipated problems. The course material had to be broken down into segments in which the students could take an active part in doing, observing, participating, and manipulating, instead of the more passive role of listening and reading. Special devices and techniques had to be developed to prevent a student from getting the feeling of being "lost" in a large class.

The teachers working with large classes soon realized the necessity for maintaining a flexible attitude, an open mind, a willingness to try new ideas in spite of many failures, and the ability to handle unpleasant situations that arose to upset an apparently smooth plan of operation. The opportunity to cooperate with other teachers in all subject areas resulted in the use of new ideas and techniques.

Planning had to be flexible and it was found helpful to break it into weekly and bi-weekly segments at first. It was discovered that students, when given the opportunity, could fill in many details of a rough sketch prepared in a teacher-pupil planing session. This caused more information to be presented in each unit so as to meet the demands of interest and ability. Closed-circuit television, film projectors, tape recorders, overviewers, and other audio-visual equipment were put to far greater use than ever before. The role of clerical help in relieving the teacher of many routine classroom and administrative duties was clarified. This afforded the teacher much more time for lesson planning and individual instruction.

An attempt was made to solve the extremely important problem of motivation by using such techniques as teacher-pupil planning, by using expert resource people, by presenting carefully worked-out lessons, and by selecting suitable content appealing to students. Teachers constantly developed new approaches designed to inspire students to learn. That

they have been successful to some degree is indicated by the feelings expressed by teachers, parents, and students as related to the amount and kind of subjects studied in the large classes.

Typical Class Procedures

A description of the activities engaged in by general science classes 1, 2, and 3 last March indicates some of the weak and strong points present at that time. The general science department was organized into three classes of approximately sixty, eighty, and ninety students. The classes followed about the same plan. They met in a large classroom for common learnings in which closed-circuit television and other mechanical aids were used. On other days, students had a laboratory period in which classes were broken down into groups, usually about ten students per group, and work was done on group projects. The teacher served as consultant, trying to assist students in learning activities suitable for their interests and capacities. Other available teachers assisted where they seemed to fit.

The No. 1 class was involved in the study of cells. This was a class of sixty students divided into seven groups. Each laboratory day, half of the class went to the laboratories to work on special experiments and the other half went to the library for research and writing special reports. In the laboratory, the instructor sometimes stayed in the room with the group and used the television for instruction and closer viewing. Laboratory students were taught how to use the microscope, how to prepare the objects to be viewed, and how to record the results. Since this class was studying cells, looking for tissues, starting cultures in water, and staining blood for observation, students could find the basis for their study from the chapter in the textbook on the study of cells. To supplement the text, the instructor furnished a variety of mimeographed information and supplied a bibliography designed to be helpful in library research. This additional information gave the student an opportunity for broader knowledge since the general science textbook was not very complete on each topic it had to cover.

The No. 2 class was composed of eighty students, and the procedure for laboratory and lecture was similar to that described for class No. 1. These students were also furnished additional information which was not found in their textbooks. For example, in the study of genetics, a glossary of genetic terms was duplicated and distributed for the study. This class was divided into three laboratory groups and then further sub-divided on the basis of interests. Some examples of their projects serve to indicate the amazing results which came from average and superior students. One student built a solar furnace which produces temperatures up to 1,500 degrees centigrade and can melt a nickel almost instantly. A girl built a burglar alarm system which her father installed in his shop. A small group explored the possibility of transmitting and receiving radar impulses. Two groups studied bacteriological phases of

Students of Snyder, Texas, High School experiment with individually constructed crystal sets.

Physics students of Snyder, Texas, High School work with specialized equipment on individual projects in experiments on sound. The head of the department assists in the demonstration.

isolating micro-organisms under culture and worked with the possibility of constructing a 200-power, six-inch refracting lens telescope for astronomical studies. Still others were learning methods of testing for uranium. Each student worked on some unit which challenged his interest and ability.

The No. 3 class studied the skeletal system. Their textbook assignment was supplemented with mimeographed pictures of the skeleton and a chart showing names and location of all bones of the body. There were nine different projects in progress in this class, and approximately ten students participated in each project. One group studied the skeleton, which included an organized study of the skull, thoracic region, and upper and lower extremities, and a report of the findings. Another group reported a careful study of long bones and attached muscles and ligaments. Others dealt with the comparison of monkey and man with a report showing the likenesses and differences, preparation of a cardboard mannequin outlining the names of the organs of the body, listing the internal organs and describing the functions of each, making a chart to illustrate the simple reflexes involved when a hot stove is touched, writing a report on rickets, and using the microscope to examine as many different cells as possible.

The general science department tried to keep classes on different phases of work all of the time so that none of the three would have the same materials and assignments at any particular time during the year. Teachers attempted to stimulate the interest of the students and to make the study of science more interesting by use of different methods than those previously used in teaching. This procedure gave students an opportunity to use their own initiative. The students had to assume a certain amount of responsibility in order to finish projects in a given period of time. A report from the biology department in March 1957, points out some additional problems:

> In the biology department, except for one large class which has been organized recently for participation in the staff utilization project, work is proceeding in the usual manner. Both of the teachers in this department are involved with the large class. The small classes rely on textbooks, library research, and visual aids such as films, charts, slides, and television experimentation. In addition to these, the large class also uses student planning and teaching. They have completed phases of work in six groups; namely, arthropods, aves, amphibians, reptilians, vertebrates, and mammalians.
>
> The department is handicapped by the space problem which is serious. For teachers who had not been accustomed to student-teacher planning activities, there was some initial fear that students would not accept the responsibility of student assistance as quickly as they should during the transition period. However, the new methods have worked out better than was expected.

The English department reported in March 1957:

> At the beginning of the second semester, the English department initiated its participation in the staff utilization project with one large section of seventy-five English I students. This has climaxed several months of planning on the

part of the English staff who have worked very closely with the science department people. At present, the department is using the same equipment and facilities as are being used in the science department. However, plans are being made for adding to the school's equipment to simplify this problem. Facilities are a major handicap, but they are being overcome by sharing and by the use of more than one classroom for the large groups.

Interest appears to be very high among the staff members involved. The learning operations planned for this group include a large use of community resources, unit-type activities, and other teaching techniques, some of which have been in use in the science classes this first semester. Much originality, however, is being employed in adapting the program to the English subject matter.

Problem Areas

Teachers of these first large classes have reported that the proposal to increase class size and teaching effectiveness by modifying instructional methods, increasing student responsibilities, and utilizing the materials and equipment in the Snyder High School demands a study of at least five more areas:

1. Pupil-teacher planning of learning experiences to make effective use of available library, community, and student resources.
2. Pupil-teacher consultation on individual problems.
3. Effective use of television, tape recorders, overviewers, opaque projectors, and other audio-visual aids in teaching large classes.
4. Individual and small group student research, study, and special activities which exploit student interest, initiative, and responsibility.
5. Conserving the time of teachers by using student assistants and employing clerks and custodians.

In the beginning of the project, as teachers had to unfreeze traditional modes of behavior and consider the development of new behavior patterns in planning and teaching their classes, some confusion and frustration resulted. Actually, this occurred because the teachers were changing techniques that they once employed, and they were in the process of establishing other behavior patterns which were suitable to the type of teaching situation they now have. Symptoms of the present behavior pattern include a much broader concept of student responsibility, of technology in the classroom, of teacher-pupil planning, of teacher-teacher planning, and of the utilization of all types of resources.

Many "growing pains" have been experienced as the work progressed to this point. At times, teachers, students, and administrators have been tempted to "throw in the towel." Most "pain," however, seems to find relief when it is realized that it is all right to have problems; when a close look at the traditional ways of doing things is permitted in the search for solutions; and when ways are provided for "blowing off steam" when things do not go so well. Teachers agree that there is a great deal more to this business of directing learning than they have been able to consider as they worked with small classes. The possibilities for instructional innovations offered by the large class organization have been an inspiration.

In the beginning, there was a tendency to overemphasize and overrate the place of TV in this study of staff utilization. This led some parents to think that television would be used to do all teaching rather than to use it only when it serves a useful purpose in the classroom. It was realized also that some effort must be expended to discover combinations of conventional techniques as well as new techniques and materials which could be employed with television to make instruction more effective and to provide new types of school experiences not offered by ordinary methods and techniques. Teachers searched for basic kinds of experiences with which to strengthen classroom teaching. They found that community resources were more readily available for the large group. For example, a local nurseryman was used with great effectiveness in a television presentation of a problem of cross-pollination, and other aspects of his vocation. He was willing to give a well-planned demonstration to ninety students, but he would not have been available for four classes. It was discovered that, regardless of any uniqueness that existed due to differences in class size, a skilled teacher was the most important piece of equipment in the classroom.

Scope of the Experimental Project

During 1956-1957, the total of daily student class hours involved in the staff utilization project was 360 out of an enrollment of approximately 900. These 360 class hours were distributed as follows: one general science class, began in September 1956, contained 90 students; a biology class, began at the same time, contained 60 students; two general science classes, organized in November and January, contained 60 and 80, respectively; and one English class started in February 1957 with 75 students.

This gentle start, followed by a gradually increasing tempo, has built up to a crescendo of activity resulting in the beginning of the crucial stage of the study in general science, biology, and freshman and senior English during the current school year (1957-1958). Preliminary work for practice purposes is underway in the other high-school English courses, Spanish, social studies, business and commercial subjects, and junior high-school language arts. Next year these, too, will be in the crucial stage in the sense that data will be collected for the purpose of evaluation.

During the present school year, 1,225 daily student class hours are scheduled, and 780 of these are considered to be in the crucial stage of the experiment. In the school year 1958-1959, it is anticipated that 1,500 daily student class hours will be involved, all of which will be in the crucial stage. This includes 125 daily student class hours in language arts now involved in the preliminary study at the junior high-school level. Data collected during these two years will be evaluated during the summer following the school year in which collected.

Gaining Acceptance of the Project

The enduring quality of any change in education is determined, to a great extent, by the attitudes of acceptance exhibited by those involved. The teachers' outlook, student reaction, and parent acceptance depend upon true understanding of the objectives of the change. This has much to do with the continued use of any educational idea.

There was no planned step-by-step program of interpretation during the first six months of the program, with a resultant lack of understanding on the part of those involved in the project and the general public. It became obvious that the continued development of the project and its evaluation required a full and continuing understanding of the purposes and techniques of the program. For this reason, the task of interpreting has been undertaken. The procedure used to secure understanding of the purposes of the Snyder experimental program by parents, students, and teachers reflected the need for the following: (1) board and administrative study and prior approval; (2) pre-planning on the part of teachers, students, and administrators involved; (3) explanation to all of the faculty and to the student involved; (4) newspaper publicity, civic group appearances, and other mass communication media.

One of the primary purposes of a three-day planning work conference during the spring was to devise methods of interpretation to students and parents. In addition, considerable attention was paid to this matter in a three-week work conference in which thirty-five teachers now involved in the program faced up to problems for the forthcoming year. The newspaper and radio have given broad coverage to the purposes of the project, emphasizing it as an experiment to enrich teaching. Civic groups and parent-teacher associations have welcomed informative presentations by students and teachers connected with the program. Teachers and students alike have become sources of information, not all accurate although generally helpful, in word-of-mouth discussion with their parents and friends. Before a true evaluation can be obtained, however, there seems to be much to be achieved in an understanding of the goals and purposes of the entire project so that the opinions and data obtained will have, as a basis, a bedrock understanding of the issues under question. Therefore, careful plans have been made to provide a continuing study of the objectives on the part of everyone involved in the experiment.

Design of the Experiment

The word "experiment" refers here to a comparison of two treatments which might be called procedure for large classes *vs.* procedures for small classes. Its design is concerned with understanding of its objectives, repeatability of the experiment, indication of what data are to be collected as well as how it is to be done, statistical analysis, and interpretation and evaluation.

The comparative experiment underway in Snyder is, briefly, to test the hypotheses that teaching of students in large groups, making use of mechanical technology (including television, radio, tape recorders, overviewers), and capitalizing on teacher-pupil planning of learning experiences for individual and small-group effort in unit-type activities is more economical, more acceptable, and more productive educationally than traditional methods of teaching in the secondary school. In this case, traditional methods refer to those methods associated with classroom situations involving twenty-five or thirty students.

No attempt is being made to defend the large class procedure or to set up an experimental situation to prove it better or more economical. The experiment is designed to contrast one approach to the teaching-learning situation at its best with another at its best, and it is conceivable that the outcome might reveal that in a given situation neither or either one is preferable.

In order to satisfy the conditions of repeatability and to provide a basis for interpreting the results, a detailed specification covering the procedures for each of the two treatments has been formed. Additional pertinent specifications will be added if they should appear in the course of the experiment. These "ground rules" governing the allowable procedures in each size class have, as their basis, that which normally would be considered standard practice. For example, the cost of providing closed-circuit television to a small class is considered to be prohibitive; therefore, the specifications for the experiment rule out its use under this treatment. However, when all costs for the operation of large classes are considered, the use of television becomes feasible and allowable.

To test the hypotheses that teaching can be done as effectively in a large class—using appropriate techniques—as in a small class, control classes have been established by an approved sampling process. The group is normal in class size, and it is being taught by the same teacher who teaches the corresponding large class. This teacher has worked with a large class in the preliminary stage of the experiment so that the two classroom procedures can be compared on somewhat of an equal footing in the crucial stage.

The objectives for the subjects under treatment have been established in terms of specific behavior expected of students. This indicates the data to be collected insofar as content is involved. It also provides the basis for measurement of experimental outcomes, including objective and subjective measurement of reactions exhibited by teachers, pupils, and parents. The following outline indicates the many areas in which measurement will be attempted.

1. *Teachers*

   What the teacher actually does when teaching
   Instructional costs (both time and money)
   Morale

Cooperativeness and group awareness
Use of instructional aids
How the teacher spends time during the teaching day
Attitudes
Professional growth

2. *Students*
   What the pupil actually does
   Knowledge of subject matter (amount of information acquired and ability to use information acquired)
   Interests (occupational)
   Attitudes
   Learning skills (how to study; reading and listening habits)
   Developmental indices (creative activities, self-directed activities, and participating activities)
   Use of technological devices to enhance learning
   Breadth of learning interests
   Retention of subject matter
3. *Parents*
   Amount of information acquired by students
   Ability of students to use the information acquired
   Amount of subject matter retained
   Reactions of students to contrasting treatments

The measurement of experimental outcomes involves the use of standardized tests even though they rarely provide sufficient data when used alone. Construction of the necessary instruments is, therefore, a fundamental problem in this experiment.

As an illustration, measurement of the knowledge of subject matter gained by the small class as well as the large class involves a combination of standard as well as teacher-made tests. It is recognized that standard tests probably will not be sufficient by themselves to measure the objectives set up for the experiment, particularly since new patterns are under evaluation. They may be biased for the traditional pattern, and any estmate of the uniqueness of the new arrangement would be lost. But, due to the lack of preparation time, standard tests will be used with the groups going into the crucial stage of the experiment in September 1957; however, as soon as teacher-made tests are available, they will also be placed into use. The standard tests will still be used to supplement teacher-made tests at all stages.

The testing pattern for the general science, biology, and English classes which are going into the crucial part of the study includes general ability tests for all students this September; standard achievement tests this September, May, and September of 1958; teacher-made tests in May and September 1958; and senior English students will receive teacher-made tests in January and again in May 1958 to provide a measure of retention before they are graduated.

A feature of the objective phase of evaluation involves a carefully prepared statement of the scope of teaching techniques utilized in each group. A teacher's log of daily activities has been developed for recording typical daily routines. Such time-action study should result in an in-

ventory of practices which distinguish the treatment of a large class from a small one.

One important feature in the evaluation will be comparative costs. This is particularly important to school boards and to others who supply funds for education. First, there should be a need for fewer teachers in the large class plan. The pertinent implication is that replacements would be less frequent rather than that the number of positions would be reduced immediately. Next, these are the costs of technological aids, some of which would not be needed in small classes. TV, over-viewers, tape recorders, visual aid devices, and many other enrichment materials have been needed in the large class procedure. Finally, clerical assistants have been provided teachers to the extent of one per five teachers.

A formula is being developed to amortize equipment costs, to disallow abnormal beginning costs, and to establish comparative per pupil costs for the two systems.

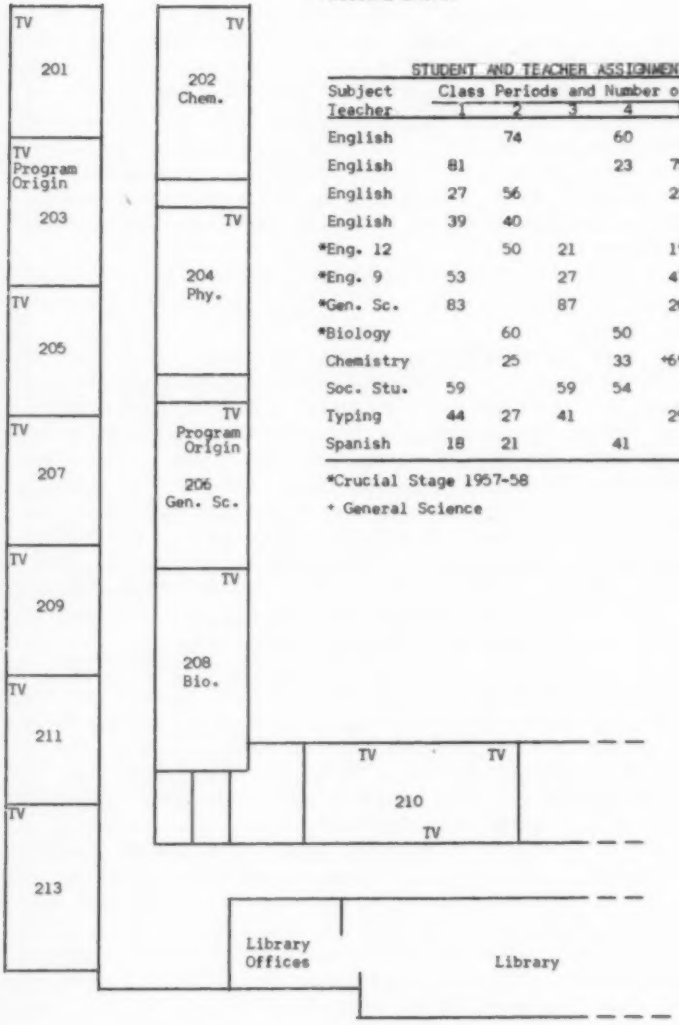
There are many factors affecting the outcomes which are difficult to test. One factor is the lack of proper facilities available for teaching large classes. The junior and senior high schools were built for standard classes, and various adaptations have become necessary. Under more ideal circumstances, the large class might be more efficient. The chart shows how the senior high-school building was adapted for teaching large classes. Teachers alternate in the use of the large classrooms, and this is incorporated into lesson plans as they plan together. In addition, the chart shows the subject areas involved in the experiment, the teaching schedules, and the number of students in each class. Those subjects for which data are being gathered this year are indicated. Teachers of the remaining subject areas are in the practice stage.

One of the many other factors to be considered is the lack of familiarity on the part of the teachers in teaching larger classes. Every attempt has been made to offset this with work conferences and by pitting the systems against each other with teachers who have had at least one year's experience in each. However, it is obvious that the outcomes will be subject to careful study in terms of the current situation which is dynamic in nature and subject to change.

The Snyder Public School is not a laboratory school. Its basic policy is to attempt to meet the needs of children by utilizing the best devices available. Its primary purpose is not to discover truth through scientific experimentation, but to apply the best known techniques in the teaching of pupils. While every effort has been made to devise machinery to test the efficiency of large classes, it must be remembered that the setting is in a public school, a part of which is not subject to rigid scientific controls. The evaluation, in its entirety, will take recognition of those factors which are variable and the material will be reported in terms of the results available. It is believed that the final evaluation will provide suggestion for the formation of basic school policy in the Snyder Public Schools as well as elsewhere.

FLOOR PLAN FOR STAFF UTILIZATION PROJECT

PHYSICAL LAYOUT



Second Floor Plan

STUDENT AND TEACHER ASSIGNMENT

Subject / Teacher	Class Periods and Number of Students 1	2	3	4	5	6
English		74		60		61
English	81			23	75	
English	27	56			22	27
English	39	40				24
*Eng. 12		50	21		19	
*Eng. 9	53		27		47	
*Gen. Sc.	83		87		20	
*Biology		60		50		27
Chemistry		25		33	+69	14
Soc. Stu.	59		59	54		
Typing	44	27	41		29	
Spanish	18	21		41		

*Crucial Stage 1957-58

+ General Science

The use of homemade 35 mm slides and transparency for overhead projection is part of the Newton plan, Newton High School, Newtonville, Massachusetts. (see chapter VI)

Finally, data collected according to the design of the experiment will be subjected to statistical analysis by recognized authorities. Interpretation and evaluation of the results will be done by the teachers and administrators involved in the experiment as well as leaders in the field.

Reactions and Current Attitudes

It is too early to evaluate the project, but teachers, students, and parents have reacted in a manner which warrants further development of the project. There exists a feeling that both pupils and teachers are growing and learning at an accelerated rate as compared with functioning before the pre-staff utilization project. Interest as evidenced by an unusual amount of productivity is extremely high.

Teachers who are working with the experiment will tell you that they are unwilling to leave teaching to chance. They seem to reflect the thought that one gets largely what one teaches toward. In various ways they express the faith that educational objectives left to chance have little hope of being attained. Even if some of the teacher-made measures are relatively crude, and they must be, if it can be established that they have a reliability different from zero, it will be of some importance. From the standpoint of the whole experiment, such tests will have the effect of weakening the relations that are to be determined; but even if the elements can be detected by relatively crude methods, it is an indication that they are present to some degree. However, factors must not be eliminated simply because they are not detected by a crude instrument. Likewise, even though the chances of getting very far in the evaluation of certain activities are limited, they should not be postponed. The plan is to evaluate simultaneously. It may be that what we discover about it will indicate its fruitfulness for further study. It will doubtless have a great impact on plans for other school facilities for junior and senior high school.

If you ask the teachers who are involved in the project, the majority will say that, regardless of the outcome of the experiment, their teaching has been revitalized and that they are doing a better job in the classroom than ever before. They will present you with good reasons why they think they are developing techniques geared to technological developments, and they will show you on paper that the cost is comparable. They will tell you that many problems associated with teaching are a result of our concepts of school buildings, scheduling, and grouping. And they will point out to you the many problems with which they are struggling. You will be asked your opinion about seemingly insignificant details and arrangements which seem to have no bearing whatsoever on the ordinary classroom situation. But if you come back tomorrow, you will be surprised to recognize something you said placed in a new setting and actually being tried in the most favorable circumstances which give it meaning. Their enthusiasm and creativeness have forced all to take a new look at the teaching-learning situation in Snyder. This alone is sufficient to justify the effort.

CHAPTER XI

Non-Certificated Laboratory Assistants Are Used To Relieve Teachers and Extend Science Opportunities for Students at the Alexander Ramsey High School, Roseville, Minnesota

CURTIS JOHNSON
KARL VANDERHORCK

WHAT can we do continually to improve instruction while simultaneously coping with increased enrollment and fewer facilities per pupil? In the face of providing a great deal more for students, how can we avoid overtaxing our teachers? These are critical questions which are demanding answers. At Alexander Ramsey High School, we have done many things in attempting to find answers to these questions. Before describing our experiment in science education, it would seem wise to offer the reader some background in the philosophy of our school and the impact this philosophy has on our science program.

Alexander Ramsey High School, Roseville Schools, Ramsey County Independent School District No. 3, St. Paul 13, Minnesota, is a suburban high school with an enrollment of 1,447 students in grades 9-12. This high school in this newly formed district was opened on September 7, 1953.

THE FOUNDATIONS OF OUR HIGH SCHOOL

This is a comprehensive high school in which efforts are made to provide as many educational advantages as possible for all the pupils. This demands a rich curriculum and a staff which is willing and able to provide extensive experiences through the entire ability range of pupils—challenging the superior students while not neglecting those of average or less than average ability. All of this requires, rather obviously, a pupil-centered school rather than an administration-centered school. The school operates for the students; continually, the program must be improved on behalf of the students. To this end, there is a readiness to undertake curricular changes, extensions, and enrichments whenever it appears that pupils would benefit—even at the expense of administrative convenience.

Curtis Johnson is Principal and Karl VanderHorck is Director of the Project, Alexander Ramsey High School, Roseville, Minnesota.

Daily Program and Activity Periods

The preceding paragraph gives, briefly, an outline of the attitude under which we operate. In carrying this out, it is necessary to give some of the details of the science program and daily schedule.

The school day at Ramsey is set up on seven periods with classes fifty-five minutes in length, with an additional five minutes for passing. The school day for both the junior and the senior high school runs from 8:00 A.M. to 3:30 P.M.

In our science program all ninth-grade pupils at Alexander Ramsey High School take general science in which the physical sciences are stressed. About three fourths of these pupils have had science instruction in grades seven and eight, in which life and earth sciences have been stressed. Biology is primarily an elective subject for tenth-grade pupils, but may also be elective for eleventh- and twelfth-grade pupils. Physics, applied physics, chemistry, and applied chemistry are electives for students in grades eleven and twelve. You will notice that we have two tracks in physics and chemistry as an attempt to provide opportunity for students of different mental capacities and interests. A conference of the pupil, one of his parents, and the high-school counselor determines which track the individual pupils will follow. In our science program, we have attempted in all instances to provide as much opportunity for laboratory experiences and individual project work as possible, both within the class and at other times. In doing this, we have collided with the problems set down in the opening remarks—improving instruction and meeting the increased demands on facilities and personnel.

In a suburban community such as ours, the rapid enrollment growth further compounds the felony. In our first year of operation as a high school, 1953-54, we ran grades seven through eleven and enrolled 1,050 pupils. The following school year, 1954-55, in grades seven through twelve, we enrolled 1,350 pupils. At the beginning of the 1957-58 school year, the district enrolled 2,250 pupils in grades seven through twelve. The completion of a new junior high school has made it possible for us to remove grades seven and eight from Alexander Ramsey High School and bring our building enrollment down to 1,447. A further indication of the increased demand upon our facilities and teachers is brought out by the fact that we presently enroll approximately 250 seniors and 500 ninth-grade pupils.

Thus, to provide the extended opportunities in laboratory and project work without building more facilities, we turned to our activity program. It is our feeling that the activity program we have at Ramsey is one of our most valuable procedures. Since the activity is the center of our experimental study, a description of it is in order.

Insofar as it is possible, all clubs and all enrichment activities, including sports, are held in the "activity period." The activity period for pupils in the ninth grade is held between 11:00 and 12:30, which period includes a half hour for lunch. For grades 10, 11, and 12, the

activity period runs from 12:00 to 1:30, including a half hour for lunch. All ninth-grade sports activities meet from 11:00 to 12:00 with lunch from 12:05 to 12:30. All sports activities, including practice of teams competing in interscholastic sports, in the senior high school are held from 11:00 to 1:00. Lunch for this group is at 1:00, with the return to class at 1:35. Our students enroll in activities in the same manner that they enroll in English, social studies, or any class. The student has made the choice of activities and has enrolled in the activity prior to the opening of school. The activities then become a regularly scheduled part of the student's program. An example of a typical week for a ninth-grade pupil during the activity period would be:

a. General science project laboratory on Monday and Tuesday
b. School staff on Wednesday and Thursday
c. Spanish Club on Friday

An example of a typical week for an eleventh-grade pupil during the activity period would be:

a. Chemistry project laboratory on Monday and Wednesday
b. School annual staff on Tuesday and Thursday
c. Girls' Athletic Association on Friday

An example of a complete schedule for a twelfth-grade boy could be:

Period 1 English
Period 2 Chemistry
Period 3 Choir
Period 4 Football
Period 5 Football
1:00-1:30 Lunch
Period 6 Senior social studies
Period 7 Trigonometry-solid geometry

Conceivably every pupil could have a different activity schedule for each day of the week. However, pupils are generally discouraged from participation in any except a few activities for less than two days a week. It goes without saying that scheduling the activities becomes a task second in magnitude only to that of making the master schedule. Every effort is made, however, to place the pupils in the activities of their interests. It is felt that the inevitable and uncomfortable dislocations which occur are the administration's problems and not the pupils'.

To make facilities available for science project work, and to provide for further enrichment which in effect would enlarge our building, we decided to open our laboratories after school from 3:45 to 5:15 and Saturday mornings from 9:00 to 11:00. The question which immediately came to mind is, "Who supervises these after school and Saturday periods?" We decided that our teachers could not. Our normal teacher load is defined as five classes and a one-hour activity period, the latter being within the school day. Clearly the teachers were at maximum load.

We had to turn elsewhere. Fortunately our school is located so that seniors from the six or seven colleges in the Twin Cities area, as well as graduate students of the University of Minnesota can become available to us. Highly diverse industries engaged in pioneering research such as Minneapolis-Honeywell, Minnesota Mining and Manufacturing, and General Mills form a tremendous potential resource of science people which we felt could be tapped for the enrichment of our science program. What we needed was an opportunity to use these resources. All of these things—better scheduling, providing more laboratory time, tapping other than school resources—seemed to point to improved learning.

In order to pursue the improvement of learning and instruction on an experimental basis, we examined the possibility of setting up a project in the Alexander Ramsey High School under the auspices of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, NASSP. In a meeting with Dr. J. Lloyd Trump, Director of the Commission, Mr. Glenn Varner, a member of the Commission, Mr. Emmet Williams, Superintendent of Schools, and the high-school administrative staff, the desirability of a project was considered and a project outline was proposed. After project approval was received, a series of meetings was held with the science faculty to study the things the project hoped to accomplish. Counsel was sought from Dr. Robert Keller and Dr. Clarence Boeck of the University of Minnesota with regard to the general program and its evaluation. The following pages describe the purposes of the project as we conceived them and the project in operation through its first year.

Purposes of the Project

It was determined that through our project we would study and attempt to determine the following:

a. What benefits may be derived from additional laboratory experiences under the supervision of project assistants?

b. How can maximum use be made of the science facilities available?

c. Who will benefit the most from the extended experiences, the gifted student, the average student, or the less than average student?

d. Is it possible to have larger classes and to supplement these classes through extra time provided in the laboratory for working on projects related to the classroom work and still have a desirable learning situation?

Our task now was to set up a method of operation and secure the necessary personnel.

Operation and Personnel of Our Project

The activity periods, after school hours, and Saturday mornings were established as the times to be used in the study. It will be remembered that an hour was provided in the activity period, an hour and a half after school, and two hours on Saturday.

Under the project, laboratory assistants were to be provided for the activity period, the after school period, and the Saturday period. These were to be over and above our regular teaching staff. We were able to secure one college senior in science education, three graduate students working on M.A.'s in science, and one graduate student working on a Ph.D. in chemistry.

After personnel was procured, the students were enrolled for the extra laboratory periods with guidance from the counseling staff. Enrollment was entirely on a voluntary basis. Due to the limitations of staff and facilities, the membership in these extra periods was largely confined to pupils in grade-nine general science and grade-twelve chemistry. With the time, personnel, and pupils organized, we launched our experiment early in October 1956.

The next question is, "What was done in these extra periods?" The laboratory assistants, in cooperation with the school administration and the classroom teachers, assisted pupils with their science projects, and, in some cases, conducted additional classwork in special areas such as simple qualitative analysis. In the absence of a definite program to follow, laboratory assistants demonstrated various aspects of their own specialty, occasionally replacing laboratory experiences for the pupils with demonstrations or lectures. During the year, many pupil science projects which had received impetus in the classroom were completed in the extra periods spent in the laboratory.

The program during the year also consisted of field trips to Miller Hospital laboratory, sewerage disposal plants in the Twin Cities, the University of Minnesota (main campus and the St. Paul campus which has the Agricultural and Home Economics colleges), General Mills, Minnesota Mining and Manufacturing Company Research Laboratory, Minneapolis-Honeywell, oil refineries, recording laboratories, and museums. Some of these organizations showed a great deal of interest in our work and contributed equipment for use in our projects. Further, a program of lectures by physicians and surgeons, nurses, biologists, chemists, physicists, engineers, veterinarians, and teachers was established.

Some Problems Encountered in Our Project

In attempting to launch the study, and throughout the year, we encountered many problems. Securing competent personnel to act as laboratory assistants proved to be difficult. Such a project as we were attempting was new to the colleges and the University of Minnesota. This meant that a delay in time could not be avoided in getting the cooperation of the various institutions. A further problem arose in locating personnel at the University, since the University is not in session during most of the month of September. Both professors and students were difficult to find. Our proposed program was also new to industry, and, therefore, it was difficult for the industries to set up a regular schedule for releasing their people to help on the project.

Many problems arose because we spent an insufficient amount of time in the orientation of the teachers and the pupils. Consequently, we did not always have the degree of cooperation or participation that we felt was desirable.

We also found that outsiders, who were not regular employees and who had not been trained in the techniques of dealing with students of many levels of ability, had difficulty in adjusting to the high-school students. Some of the assistants soon learned that dealing with individual personalities was also a science, if not an art.

Proper coordination and evaluation were major stumbling blocks in our first year. Insufficient planning time and inadequate orientation made it difficult, in several instances, to coordinate the activities in the extra laboratory periods with the classroom activities. Continual, as well as year-end, evaluation was a critical problem through the entire year. Early in the project, an individual, trained in evaluation and orientated to our project, began to work with us. Due to circumstances beyond his control, it was impossible for him to continue, and we were not able to secure another person. This left the needed evaluation in an uncertain and precarious state, with no single individual responsible.

These major problems and a myriad of lesser ones plagued the project all year. However, in spite of the many difficulties and uncertainties, we feel that the project had a very worth-while beginning and certainly provided us with a multitude of ideas for improving our procedures this coming year. The following paragraphs offer some evaluation of the year's effort.

Evaluation of Our Project

At the outset, it needs to be emphasized that any evaluation of our project is largely opinion. At this stage there is little empirical evidence to commend or detract from the project as we conducted it. A statistically proper situation is not implied nor was one intended. The entire program was (and is) pupil-orientated, and it was not deemed advisable to deny a pupil an opportunity to participate in the activities because he was not in a random selection. Thus, the condition of groups chosen at random, essential to real experimental design, is absent and inference in the strict sense is not possible. However, this does not mean that no inference is possible and that nothing is to be learned from the study. On the contrary, we feel that we learned a considerable amount and that we can make some inferences based on our observations. At least we feel that the interests of the pupils have been served and that each year a project of this sort is in operation a better and more valid study in the succeeding year is made possible.

Test Scores

It may be possible to offer some evaluation in terms of certain test scores. Each pupil enrolled in a science course was administered at least one standardized test at the beginning of the school year 1956-1957, and

one again at the end of the school year. With the score of these tests, the pupil-groups which participated in any of the project activities can be compared with the class as a whole to see if any patterns emerge.

Pupils in grade-nine general science were subjected to two forms of two standardized tests, the *Cooperative General Science Test, Form X* and *Form Y*[1], and the *Read General Science Test, Form Am* and *Form Bm*[2]. In each case the first mentioned form was administered in October and the latter in May of the school year 1956-57. The two forms of each of the tests are purported to be equivalent. Table I compares the raw scores on the *Cooperative General Science Test* of the ninth-grade group as a whole with the sub-groups of pupils who participated in the experiment during the activity period. No ninth-grade pupils were enrolled in the after-school sessions and attendance data on the Saturday period is so scanty that no comparison can be made.

An examination of Table I and Table II shows, first of all, what several classroom teachers felt to be a rather meager "gain" for almost a year's instruction. Without going into the merits of the two tests as measuring instruments, or the question of whether or not the tests are suited to the course objectives of ninth-grade general science at Alexander Ramsey, we can console ourselves in observing what seems to be *some* "gain." It will be noted that the highest achievers were not in the program. The score range on both forms of both tests is greater for "all pupils" than it is for the "activity period" group. However, the beginning of the year median raw scores of the activity group and the end of the year median scores of the activity group are higher on both

TABLE I. A Comparison of Raw Scores on Forms *X* and *Y* of the *Cooperative General Science Test*, Administered to Grade Nine, School Year 1956-1957

	All Pupils		*Activity Period*	
	*Form X**	*Form Y***	*Form X**	*Form Y***
Number of Pupils	398	372	35	33
Raw Score Range	0 – 83	0 – 75	0 – 61	0 – 68
First Quartile Score	17	17	18	19
Median Score	26	28	29	34
Third Quartile Score	38	40	41	48

*Form *X* was administered October 30, 1956.
**Form *Y* was administered May 21, 1957.
Table II makes the same comparison of raw scores on the *Read General Science Test* for the same groups.

[1]*Cooperative General Science Test*, Cooperative Test Division, Educational Testing Service, Princeton, New Jersey.
[2]*Read General Science Test*, Evaluation and Adjustment Series, World Book Company, Yonkers-on-the-Hudson, New York.

TABLE II. A Comparison of Raw Scores on Forms *Am* and *Bm* of the *Read General Science Test* Administered to Grade Nine, School Year 1956-57

	All Pupils		*Activity Period*	
	*Form Am**	*Form Bm***	*Form Am**	*Form Bm***
Number of Pupils	392	363	34	33
Raw Score Range	12 – 69	16 – 72	12 – 66	17 – 67
First Quartile Score	32	37	33	36
Median Score	39	46	45	48
Third Quartile Score	49	55	51	59

*Form *Am* was administered October 31, 1956.
**Form *Bm* was administered May 22, 1957.

tests. Probably the most important feature of the tables is the greater gain shown on both tests in the Third Quartile Score for those in the activity period over the ninth-grade group as a whole. It would appear that the activity period experiences tend to increase the achievement spread, if we discount the highest achievers, who were not in the activity program. Increasing the spread of achievement is generally accepted as a symptom of good education.

The chemistry pupils in grade twelve also took two forms of a standardized test, the *Anderson Chemistry Test*[3], *Form Am* being taken December 9, 1956 and *Form Bm* being taken May 22, 1957. Table III compares the raw scores on the *Anderson Chemistry Test*, both forms, for the twelfth-grade chemistry pupils as a whole with the various sub-groups of pupils who participated in the experimental project during the activity period, the after-school period, and the Saturday period.

An examination of Table III shows apparent gain for the chemistry group as a whole, the median raw score for all pupils rising from 36 to 40, while the first quartile score increased from 28 to 31, and the third quartile score went from 44 to 54. It is interesting to observe the score range for the activity period group (during school hours) and the after-school and Saturday groups. The year's end range for the activity period groups was 16 to 71, while that of the after-school groups was 33 to 74, and the Saturday group was 31 to 71. It would seem from these data that the high achievers were the group most likely to spend time ouside of the regular school hours. If this means that we are providing better for the more able students, the time spent beyond the scheduled school day is worth-while. Attention is also drawn to the differences between the third-quartile gains from group to group. The smallest gain is in the activity period group, 35 to 42, while the largest gain is in the Saturday group, 46 to 68. Whether the gains shown are because of the program,

[3]*Anderson Chemistry Test*, World Book Company, Yonker-on-the-Hudson, New York.

TABLE III. A Comparison of Raw Scores of Four Groups of Pupils on Forms *Am* and *Bm* of the *Anderson Chemistry Test*, School Year 1956-57

	All Pupils		*Activity Period*		*After School*		*Saturday*	
	*Form Am**	*Form Bm***	*Form Am**	*Form Bm***	*Form Am**	*Form Bm***	*Form Am**	*Form Bm***
Number of Pupils	108	105	33	22	15	17	14	16
Raw Score Range	13 – 64	16 – 74	15 – 57	16 – 71	36 – 57	33 – 74	23 – 54	31 – 71
First Quartile Score	28	31	25	26	40	41	37	43
Median Score	36	40	29	34	46	54	45	50
Third Quartile Score	44	54	35	42	49	63	46	68

*Form *Am* was administered December 9, 1956.
**Form *Bm* was administered May 22, 1957.

or the student, or both, or something else, cannot be determined with the evidence available. At least, the project seemed to provide some additional opportunity for the better pupils.

Many obvious criticisms could be made of any attempt to draw conclusions on the basis of the test data at hand. We are painfully aware of the many goals of the science program which cannot be quantified in an achievement test. In the future we would hope to find a means of measuring, however roughly, such things as skills, techniques, attitudes, *etc.*, which are so important in science education, but so difficult to appraise with paper and pencil devices.

Science Fairs

The project work of pupils in the program seemed to generate much enthusiasm and many of those in the extra-laboratory periods participated in the Minnesota Academy of Science Fair. Participation before 1957 had been spotty. In the spring, forty-one Alexander Ramsey High-School pupils entered thirty-nine exhibits in the Science Fair, and were awarded the impressive total of seven first places, and seventeen honorable mentions. This was a greater number of awards than received by any other school in the state. No cause and effect relationship is implied here, but at least we can suspect one. The wholehearted interests of the pupils in the state-wide Science Fair, and in the school's own P.T.A. exhibit in April are splendid examples of an increase in desirable attitudes.

Further Opinions

We have many opinions and observations as to the value of the experiment. It seemed to us that the increase in pupil interest in science projects was noteworthy. Having the laboratories available has increased interests on the part of many of the better pupils. It seemed that many of the pupils of higher ability were thoroughly involved in other school activities during the school days and needed an opportunity to expand

themselves outside the regular school time. Further, as pupils' interest in their project increased, they would work on them at home. We would consider this a commendable type of "home-work," and we believe that the parents share our view.

The guest lecturers and the field trips also served to educate and stimulate interest among the pupils. When students hear a doctor describe his work, or a scientist explain the method of research employed in the development of new products, we have found displayed a greater amount of enthusiasm on the part of students. Often some idea picked up in one of the lectures, or on one of the field trips, would be translated into a science project.

Guidelines for Further Study

At Alexander Ramsey High School we feel that we have learned much in this first year of our project and that we can make many improvements in the conduct of our experimental study in the future. In concluding, we would like to set down some of our observations and the directions they point for the work of this school year, 1957-58.

Previously, we mentioned the fact that the experiment was started too soon after it was born. A great deal of time is necessary for working out and establishing definite procedures. The teachers must understand thoroughly the objectives of the experiment, and then convey this understanding to the pupils. We have found that a program of this type cannot be sold to a large group in an assembly, but must be explained in detail to small groups to show the advantages for the persons who are working in it. Our orientation of some teachers failed, partly because we did not bring about a proper understanding. Most of the teachers appreciated, as an advantage, the bringing in of someone as a laboratory assistant who had advanced specialized training. However, some teachers were apt to feel insecure when an assistant who is working closely with them has much more training in a certain area than they. Understanding can lessen this danger.

We further learned that it is essential to have a person trained in evaluation close to the experiment so that procedures may be checked and a continuity of observation is maintained. Also, last year, there was insufficient liaison between the classroom teachers and the laboratory assistants in several instances. The time in the laboratory occasionally became divorced from the classrooms and the classroom teachers. We certainly want to prevent a recurrence. The laboratory assistants must work very closely with and under the supervision of the teachers whose students are in the laboratory period.

The program did not prove to be prohibitive in cost. Since we had no precedent to go on, we arbitrarily selected an hourly pay rate for the laboratory assistants, taking into consideration their time, travel, and inconvenient hours of work. The assistants were paid $4.00 per hour spent in the laboratories.

What are the directions for this year? Basically we plan about the same program with the same objectives as last year, but with all the improvements we can institute.

In having so many students and a number of teachers and laboratory assistants being brought into the experiment, we have found it necessary to release one of our science teachers for five hours a week so that he can devote this time to coordination of the program.

In addition to the teacher who spends part time as a coordinator, another individual is spending about half time on evaluation of the program. It is necessary for the coordinator, the evaluator, and the project assistants to meet at regular intervals to appraise what has been done and to recommend improvements. We expect this to be a regular and important feature of this year's program.

At the beginning of this school year, one of the first undertakings is the orientation of all teachers, particularly the science teachers and the laboratory project assistants in the program. Time is planned in the science classes explaining objectives and procedures of the extra laboratory period to the pupils. In the orientation and registration of pupils, a great deal of information in regard to many different kinds of projects, Science Fairs, and other opportunities open to them, is to be available.

This year, also, we expect to have more field trips in the year to help motivate and give the students ideas for project work. It is hoped

A group of ninth-grade science students of Alexander Ramsey High School, Roseville, Minnesota, work with an assistant in the laboratory.

that several outstanding lecturers can be presented in addition to people from the community.

The first year our laboratories were scheduled for one and one-half hours five days a week in the after-school sessions. Our experience makes us believe that it would be better to have two-hour periods, two or three times a week instead. We plan no change in the two-hour period on Saturdays.

We found that the pupils in the program needed some structuring of their activities, particularly the grade-nine group. Opening the laboratories was not enough. Suggested or assigned projects received the bulk of student effort. Accordingly, this year a planned series of projects is to be undertaken in the general science group. This year, as last, the chemistry students will be assigned a project with the choice being up to the pupil, subject to teacher approval.

Last, but certainly not least, we hope to improve our evaluation of the year's project. The area of knowledge of science is fairly easy to measure through the use of various achievement tests. We are searching for a means of intelligently assaying the many other things we feel are important outcomes of a science program—skills, attitudes, understandings. Extended laboratory work would seem to be slighted in a strictly knowledge-type test. If the value of a science program such as we are attempting to provide is to be adequately determined, we must measure the objectives of science education which are not measured by the usual standardized tests.

We believe the opportunity to carry on a program such as this has inestimable value to all persons who have the opportunity to work with it. Adaptations and changes in procedures are brought in from time to time and new ideas develop. It is our hope that the ideas and results we experience will be of value to many schools as well as to our own. The entire project serves as excellent training for present and future teachers. It utilizes community resources. If such a program can be set up in the science areas, it probably can be set up in mathematics, English, social studies, or other areas. If our project leads to new ideas in other areas as well as science, then the project will have been a considerable success. Research and time hold the answers.

CHAPTER XII

Some Influences of a New School on Planning Staff Use and Curriculum Development Are Studied in Syosset, New York

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ONE of the staff utilization studies sponsored by the NASSP Commission centered upon ways in which more functional and adaptable building facilities affected staff utilization. The school selected to study this aspect of the program was the new high school at Syosset, New York.

The Syosset High School is a series of four "Little Schools," each consisting of a series of ten classrooms, a unit library, several work areas, plus a curriculum workroom, all surrounding a large open "Project Area." Each Little School houses from three to four hundred students and is connected with the other three similar areas as well as with common service areas—cafeterias, shops, homemaking rooms, auditorium, gymnasium, offices, and student lounge.

In an article in the *Architectural Record,* the architects who planned the school explained the concept: "In the center of each Little School the 45 x 50 ft. Project Area serves as a multi-purpose space where students will meet and work together."[1]

BACKGROUND OF THE STUDY

It was the study of the relationship of this building to staff, students, and curriculum that was proposed to the NASSP Commission. Of particular concern was the way in which Project Areas could implement regular instruction with different sized groups and promote closer working relationships among teachers.

However, there were many factors concerned with the operation of the high school in addition to the demands made by the proposed study. These background factors may be summarized by indicating that Syosset's high school was in its first year in a relatively young district, with a faculty drawn together for the first time in September of 1956. Its

[1]Smith, R. Jackson, "Little Schools and the Quadrangular Plan," *The Architectural Record,* October 1955.

John Price is a Teacher, William C. French is Principal, and Ernest F. Weinrich is Superintendent—in Central School District Number 2, Syosset, New York.

student body of nine hundred and eighty pupils was drawn from nine different schools within the district. Thus, the staff and students entered a school not yet completed and operated for the first year without full facilities.

Of primary importance were three basic considerations: (1) the need to determine and carry out the needs and wishes of the local community; (2) need for serious attention to the establishment of routine operational procedures—these procedures, taken for granted in the established high school, form basic machinery and had to be tested and standardized from the beginning in Syosset—and (3) consideration of the horizontal and vertical organization of the usual curricular framework and of the continuing development of materials to enrich this basic structure.

While positive and constructive, these factors represented a broader set of goals than those outlined within the framework of the study under consideration. Despite this range of objectives, it is the opinion of the administrative staff that some extremely effective work was accomplished on the project.

Objectives of the Program

Essentially, it was our hope that a better educational program could be established in the school. While we felt this did not necessarily require a change in content offerings, it might involve some reorganization of content presentation. Our objective was to determine how the physical characteristics of the building could implement such specifics as: ways in which capable teachers could give effective instruction to an increased number of pupils; relationship of class size to the purposes of instruction and methods used; teaching certain learnings which cut across subject lines; freeing teachers and students from traditional approaches to education; flexibility in schedule arrangements; closer working relationships among teachers; student growth in citizenship, responsibility, creativity, and self-direction; and the quality of instructional techniques.

Combined Classes in the Project Areas

Work with large classes was not necessarily aimed at establishing higher pupil-teacher ratios, but at a flexible approach to better use of the talents and techniques of especially competent teachers reaching a wider range of students than normally possible. Both the Commission and the teachers involved felt that real values existed in integrated learning experiences. The same pupil might study Colonial America, for example, in an entirely different manner in his social studies, English, and art classes and still perceive very little relationships among these subjects. Pooling the resources of all three subject areas could produce a unit giving a more complete picture of the period and create vastly better understandings in the mind of the pupil.

One of several classrooms which surround the central "project area" in the high school at Syosset, New York. The "project area," readily accessible and visible from the classrooms, may easily be used by groups of students for different purposes. Cooperative planning by teachers is facilitated.

Another view of the central "project area."

It was not until the final weeks of the first semester that Project Areas were used as real instructional tools. From that time until the end of the school year, a series of pilot projects explored variations of the traditional instructional plan when they appeared to create a better learning situation.

Combined Classes in Art

In January 1957, the art department presented a unit in lettering skills as a combined class project. The general purposes of the unit were to explore effective techniques which might be used in a large class, to develop student responsibility and creativity, and to teach a motor activity to a large group of pupils using the skills of an instructor with an extensive background in commercial art, an area in which other instructors were not qualified. In planning for the sessions, the problems anticipated by the teachers involved were felt to include:

1. The need to provide for the fast learner, yet to respect the individuality of the pupils.
2. The need to provide for the absentee students and for the slow learners.
3. The problem of social control within an unusually large group.
4. A question of the quality of instruction that could be given in a highly technical unit to such a large group.
5. The problem of enabling pupils in the rear of the large project area to see the visual materials.

The unit which continued for a week involved joint groups of from fifty to sixty students. Students met during their regular periods and the project continued throughout the day at the eighth-grade level. A single teacher conducted the classes assisted by a substitute. This teaching unit was an example of the more effective use of a master teacher with a large class.

Individuality—The Fast Learner

Extreme care was taken to provide for individual speed of attainment. Prior to the presentation, the assistant instructor, a substitute teacher, was carefully briefed on mechanics of the presentation and the techniques to be taught. During the session, the instructor gave a detailed demonstration pausing for questions only at the end of a sub-unit. Meanwhile, the substitute circulated among the pupils to answer immediate questions as they arose among individuals. The need for constant attention held the interest of the fast learners. Slower students were given extra attention by the substitute. As especially quick students completed their work successfully, they were paired with individuals who were slower to grasp the essentials, thus assuring the latter constant assistance.

Absentees and the Slow Learners

It was necessary to recover ground lost by absentees since completion of the problem depended upon complete knowledge of the skills covered. Students who had missed the initial work were placed at one side of

the Project Area with pupils who wished additional review. A superior student was paired with each of these pupils to give individual help. One instructor spent the entire period working with this small group (approximately ten students per session). The second instructor continued work with the rest of the class.

Social Control

Perhaps because of the unique situation, discipline problems were at a minimum. Because instruction was given at a much faster rate than in a normal class, attention remained at a very high pitch. It was generally agreed, by the teachers participating in all large group classes, that discipline was not as much of a problem as had been anticipated. It may be that the size of the class curbed exhibitionism. Direct involvement of the student in the project may have been a contributing factor not only to providing motivation but also to helping to hold the pupils' interest.

Quality of the Instruction in a Large Group

As contrasted with students who were taught the same material in a traditional class arrangement, there was a clear-cut improvement in the rate at which the entire large group class mastered these skills. Because of the increased attention that could be given to slower students, the quality of performance was higher in the large group. This was checked by comparison of individual work of a combined class with that of a traditional class. Normally, given at the seventh- and eighth-grade level, this unit of learning served to isolate a few outstanding persons who might be guided further in the area of lettering. In groups of some fifty-four pupils, approximately twenty to twenty-two persons in each period performed at an above-average level. This may have been due to motivation, more individual attention at a needed point, and incentive for the superior student. These factors could not have been obtained without the use of two instructors during the initial stages.

Visual Perception in a Large Room

It was discovered that use of soft black charcoal on large white paper showed more effectively from the rear of the room than the traditional chalk and blackboard. A very large bulletin board at each end of the Project Area permitted diagrams to be left in view for student study throughout the day. This advantage does not apply to the normal classroom, since the traffic flow in a single classroom is negligible. Equipment was kept available in a storage area behind the bulletin boards, speeding distribution at the beginning of each class session.

English and Art as a Combined Unit

A second combined project was designed to use other school facilities in addition to the Project Area in the subjects of English and art. The primary goal was to help pupils understand character development and interpretation through various communications media. Other objectives aimed at teaching common learnings cutting across subject lines and

providing opportunities for student growth in creativity and self-direction. An additional goal was the study of ways in which capable teachers could give more effective instruction to an increased number of students.

The program was planned to integrate completely both departments. Students selected a character study in literature, either from their English assignments or from material they had written themselves, interpreted the characters by means of masks, and presented plays based on their interpretations. An English instructor assisted in selecting and interpreting the literature. Art teachers took charge of class instruction during the work on the masks and production of the plays.

Masks were selected for several reasons. First, students modeled them directly on each others faces, making team work and cooperation among the students essential. Second, since the thin layers of gummed tape which made up the masks easily followed the contours of the face, a degree of realism was achieved even by the most inexperienced pupils. Since masks have been used in drama throughout history, the problem provided an opportunity for an introduction into, and special research on, this area of literature for advanced students. It also served as an ideal introduction to the problems of sculpture and three dimensional design for the art students.

The first session, in the hands of the English department, was held in the auditorium, where the stage, with its lighting and audio facilities, could facilitate the effectiveness of a demonstration by advanced students of the techniques desired. From there the group moved to the Project Area, where the English teacher held a discussion on the literature selected. While this took place, and the personalities described by the pupils took form, the art teachers sketched their interpretations of these characters, graphically crystalizing the thoughts of the students. At the end of the demonstrations, the class split into three sections. One remained in the Project Area, and the other two adjourned to adjacent classrooms. They were each shown a portrait sketch and asked to write a composition based on the personality they could read into the sketch.

The entire group then moved into one of the art rooms to write or adapt their plays, and make masks interpreting them. In several instances, they selected musical backgrounds to accompany their presentation. As a final part of the program, they adjourned to the auditorium where the plays were given and students could see their characters in action. Pupils were able to create a situation and demonstrate how a particular individual might react when faced with a given conflict. They began to see that the way in which an individual thinks, his way of life, his occupation, and his experiences all affect his personality.

The project provided some excellent springboards for creative writing. Some students imposed conflicts from their own lives on the characters drawn, thereby giving expression to many of their own problems. This, of course, has great possibilities for guidance and gave the teachers an opportunity to gain a much greater insight into individual pupils.

Evaluation

To what degree had the teachers involved in the group projects accomplished their objectives? To answer that question, evaluation meetings were held after each session. Teachers who had participated, as as well as those who acted as observers, were invited. The degree of success of each presentation varied according to specific goals, skills that were taught, and teaching techniques used. In the judgment of those taking part, however, even those less successful projects had the advantage of providing the pupils with enriched experiences that otherwise would not have been received. Although some evaluative procedures were worked out in this first half-year of operation, much remains to be done in this area.

In these pilot studies, a framework was set up to show ways in which capable teachers could give effective instruction to an increased number of pupils. Flexible scheduling procedures were established to implement the program. The nature of the joint classes made mandatory closer working relationships among teachers. Student growth in citizenship and responsibility was promoted by use of pupils as classroom assistants, as well as by independent pupil work in the project area. Opportunities were provided for repetition and special help for those students who found learning more difficult. A variety of ways were explored in which teaching across subject lines could be carried out. The type and quality of modern instructional aids were increased during the year.

The use of the Project Areas by these pilot groups has induced in the school an increased awareness of the common learnings that extend across traditional subject lines, as well as a willingness to take advantage of the human resources available among staff members to enhance the teaching of these learnings.

It should be remembered that these findings are merely the results of pilot studies—that in a school with an entirely new staff and student body, a full awareness of the potential of the school is yet to come. Because a clear-cut improvement in the retention of material taught in large group classes was seen in the judgment of experienced teachers, we feel that a continuation of the study of such techniques will add ultimately to the fullest utilization of the staff, the physical facilities, and the student potential.

A Look Ahead

Evaluation sessions for each project laid the groundwork for subsequent cooperative programs. The staff gradually began to formulate ideas on the use of their building. Certain general conclusions were recahed:

1. Sufficient time must be available for staff planning since intensive preparation for group programs is required.
2. Tapes should be made of each presentation, and if possible, slides made of the visual materials. This would provide many advantages;

(a) Absentees would gain the full effect of the enriched unit.
(b) Such recorded material would be of value for study by student teachers or teachers new to the system.
(c) Such material would help in planning future programs.
(d) The material could be used by a substitute teacher with classes that had not been present at the original session.
(e) It would be presented to PTAs and other groups as a means of community communication.

3. Several staff members felt that visitations with classes in the other subject areas taking part in group sessions would help in planning.

4. A more intensive preparation and a greater increase in the type of materials used is needed; this should be recognized in determining the number of teaching periods assigned.

5. The main presentation should be followed by an evaluation session in which the pupils analyze their experience. By dividing into small groups and using the rooms adjoining the project area, the main speaker can circulate easily to clarify any necessary points.

6. Teachers must have their units firmly in mind. These units must correlate logically across subject lines if more than one subject is involved. Pupils have repeatedly demonstrated in their answers to questionnaires and in interviews that even an interesting program loses its impact if the connection between subjects is vague.

7. Over a period of time, presentations involving some or all of the pupils maintained the greatest sustained interest.

8. Some flexibility of scheduling is required to free teachers for planning. If teacher time is to be saved for some staff members, that time might well be used in advance planning for such programs.

9. The reluctance of individuals to participate in discussions was noticed in the early sessions. This is a frequent criticism of large group teaching. This factor modified itself to a considerable extent as students became more accustomed to the novelty of working in large groups. As the effectiveness of the programs increased, student interest rose and inhibitions decreased. In the later sessions student participation was greater than in a normal class.

10. The use of a resource person was suggested as an aid to time saving of the teachers preparing the unit. This possibly implies establishment of a curriculum materials center of wider scope than is normally used.

11. The use of the Project Area must be a real enrichment of the program; as a regular part of the established curriculum program, it should be used only when it is the best technique possible to achieve the desired results.

Out of the work with the large group classes in the past year has grown a series of projected programs for combined classes for the future. Unlike earlier programs, the entire year's work will be pre-planned to integrate more effectively units studied in the participating classes. Greater use will be made of modern instructional aids such as filmstrips, opaque projectors, and tape recordings. As the courses are prepared, an outline of material to be covered will be distributed to all teachers in all subject fields giving them an opportunity to tie in with combined classes in related units.

Breaking Barriers for Dynamic Education*

THREE of the persistant problems of secondary education—the integration of subject matter, class size, and the study hall—have been approached at Syosset High School by an experiment in team teaching. Composed of an English and a social studies teacher, the team works with a common group of tenth-grade students in the subject areas of World Literature and World History.

Scheduling a team program poses no great problem for the average secondary school. Students are scheduled with the team teachers in such a way as to have their classes "back to back." In addition, all the students in this team program have their study period at the same time (under the supervision of the team teachers). This period is called the guided study period and stresses individual pursuit of learning through project work and research determined by the student's interests and abilities. Thus, a student would have English followed immediately by social studies or *vice versa* and then would meet again with these teachers for the guided study period. The student's schedule is not, on the surface, different. He has a normal size class in each subject area and meets with a large group of students for study period. The team program calls for a three-period commitment on the part of the student allowing three other major subjects in a normal six-period school day.

By scheduling in this way, flexibility of class sizes within the team program is achieved. For example, as one class of the program is meeting with the English teacher and one with the social studies teacher during the same period, one teacher can teach both classes when the type of instruction does not necessitate a normal class size. Initial presentation of a new area to be studied, review of an examination, a movie or filmstrip are a few examples of classes which can be held, we feel, with as much learning taking place in a class of forty or fifty as in a class of twenty-five. In addition, during the guided study period, large class instruction can also be utilized. In both of these cases, there is no disruption of the schedule of the school. Students are available for a variety of groupings without withdrawing them from other classes.

When one team teacher has both his and his fellow teacher's class, the teacher thus released from a teaching period can work with individual students or do additional planning on enrichment for his or her area. Additional planning time is an obvious necessity in any teaching program which goes beyond the narrow limits of the fundamentals. Individualizing the instruction also places a heavy burden on the teacher's time. Both planning time and individualized teaching can be achieved through this schedule.

*This portion of the chapter prepared by John Hodgson and Christine Abrahamsen, Teachers in Syosset High School, Syosset, New York.

Grouping students in varying size classes is not the only feature of this schedule which provides an opportunity for better teaching and hence better learning. Ability groupings are also possible within the structure of the team schedule when the occasion warrants. It is not necessary, in this schedule to pre-group all students of a particular ability, however measured and determined, together in one class.

Another feature which has been extensively used is having all team students together during the guided study period. From time to time, teachers in special areas, for example, art or music, or teachers with a particular background in their education or experience, are asked to contribute to the understanding of the subject matter being studied. As such outside teachers have commitments of their own, it would not be possible for them to teach each of the team classes individually. However, by using large class instruction, all the students of the team program have the opportunity to experience this enrichment of their work.

An example of both the scheduling flexibility for varying learning situations, teacher planning, and for emphasis on integrating the learnings in these two subjects can be best described by the following team unit of study. Having completed the study of ancient Rome in social studies, the reading of *Julius Caesar* was begun in English. In order to enable the students to hear Shakespeare, it was decided to present the entire play in a series of dramatic readings by the students. This required additional time for the English teacher to work with individual students and to plan the presentation which was given in the auditorium in order to have varying lighting effects. While the English teacher was coaching small groups of students, the social studies teacher continued the study of the history of Rome, using visual aids and stressing the informational background of the play. The reading groups who missed certain portions of the social studies class were able to make up what they had missed the next day. Since the social studies class was now two periods in length, a portion of this time could be devoted to individual study with the guidance of the social studies teacher.

At this point, the team teachers feel some subjective observations are possible on how students react to this program. *First,* some students lack the self-direction necessary for a relatively unsupervised study period. In order fully to utilize the facilities of the building, it is necessary to count heavily on the students assuming responsibility for their own learning and supervision without a teacher in the room with them. *Second,* the process of integrating and correlating the two subjects areas meets with resistance by some students who feel the content goes no further than the mastery of fact. This is the entire course to them and any thought demanded beyond this in relating the information learned to other subjects is considered an unnecessary burden. *Third,* placing the burden of real learning in the area of critical thinking on the learner meets with similar re-

sistance in some quarters. *Fourth,* the planning time made available by varying the class sizes and having a common planning period has definitely enriched the kind of teaching done by the team teachers. *Fifth,* once the barriers of dislike for individual learning responsibility have been lowered, the response to the challenges of relating what they (the students) have learned in both areas is enthusiastic. *Last,* by working closely with students in varying situations, the relationship of the team teachers to their students is very close. There is a feeling of cooperation and common concern among all the team teachers. Through knowing the students better and sharing opinions and analyses, the team teachers feel their guidance of individual students is more effective and their teaching better directed.

We feel quite strongly that Syosset High School has in its team program many elements of the best thinking on learning and the purposes of education. It presents many challenging problems of staff relations, scheduling, and use of facilities to the administrator. It also offers a challenging opportunity for the secondary school to provide a truly comprehensive education.

CHAPTER XIII

Classes of 10, 20, 35, and 70 Under Varied Conditions Are Taught in Jefferson County, Colorado, To Discover Effects on Students and Teachers

GORDON E. PATTERSON
LLOYD G. SWENSON
ROBERT H. JOHNSON

THE problem of obtaining adequate numbers of qualified teaching personnel, adequate utilization of school plant facilities, and of staff competencies face virtually all school districts. Last year, the staff of the Jefferson County School decided to undertake a research program designed to determine the effects of class size on the achievement, attitudes, and behavior of pupils; and, at the same time, allow for various instructional techniques which would make the best possible use of teacher competencies, and would also provide for full utilization of school building plants. We began to formulate basic ideas for a research project that would embody the phases of the program which we wanted to study, and then made an estimate on the cost of the study. We found that the estimated cost placed the study out of reach if District R-1 were to finance the study entirely from its own resources. We then presented our research program to the National Association of Secondary-School Principal's Commission on the Study of the Utilization of the Staff in the Secondary Schools, and a grant from that organization to District R-1 made it possible to go ahead with the project.

Four solid subject areas required of all students at the high-school level were chosen for the experiment. They were biology, geometry, American history, and English. Classes of ten, twenty, thirty-five, and sixty or seventy students were established in each of the four academic areas. These class sizes were arbitrarily chosen, recognizing that we might have experimented with other sized groups. The students enrolled in classes of ten were superior students, selected on the basis of scholastic aptitude and past achievement. Students enrolled in classes of twenty, or larger, were unselected and were assigned to the classes at random.

All classes of ten, twenty, or thirty-five students were assigned one certificated teacher. The larger classes of sixty or seventy students were assigned two certificated teachers with two exceptions: one social studies

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class of seventy has been assigned one certificated teacher and a clerk assistant. The clerk will assist by doing library research and helping the instructors with location and preparation of materials, attendance, reports, and other comparable matters.

The other exception is a large English class. This class will have one certificated teacher and an assistant who holds a degree from a liberal arts college. The assistant will have a major in English; however, she will not have the required hours in education that are necessary for certification. An experimental situation of this type may indicate new areas of experimentation that would give some empirical data regarding certification practices in the state, and whether or not such certification practices are justified.

During the summer of 1957, three teacher specialists in each of the four subject areas were employed to develop the basic curriculum material for the study. The committees were assigned the task of preparing a curriculum guide for their subject for a full year of study. They were asked to suggest time allotments and teaching techniques for each unit. They also explained objectives and compiled complete bibliographies to aid the teacher.

The curriculum guides outline the basic minimum amount of work that each teacher should cover in order to assure validity in our testing program. Additional units of work are also presented for use by those teachers who are able to go beyond a minimum coverage. This, too, should be reflected in the test results. Teachers have complete freedom as to their teaching methods and materials. We require only that basic units be covered. Each student involved in the study is assured of receiving as much education in the subject as would be obtained in the regular classes not included in the study. For the study during the 1957-1958 school year, eleven hypotheses will be examined. They are:

1. An unselected group of twenty (20) students with one teacher will achieve better results than a comparable group of thirty-five (35) with one teacher.
2. A class of seventy (70) students taught by two (2) teachers working as a team shows better results than do seventy (70) students taught by two teachers in two separate classes of thirty-five (35) each.
3. A class of seventy (70) students taught by two (2) teachers working as a team achieves better results than do students in a class of twenty (20) taught by one teacher.
4. A team of two (2) certificated teachers can produce better results in a class of seventy (70) students than can a team consisting of one (1) certificated teacher and one (1) non-certificated person with a college degree or a team consisting of a certificated teacher and a clerk.
5. Classes with membership of sixty (60) or seventy (70) will produce better results in certain subjects or phases of a subject than in other subjects or phases of a subject.

6. Classes of twenty (20) students will produce better results in certain subjects or phases of a subject than in other subjects or phases of a subject.
7. Classes of thirty-five (35) students will produce better results in certain subjects or phases of a subject than in other subjects or phases of a subject.
8. A group of ten (10) superior students with one (1) teacher will accomplish more than a similar group of students enrolled in a class of either twenty (20), thirty-five (35), sixty (60), or seventy (70) students.
9. Morale of teachers working as a team with a larger group of students is higher than the morale of teachers working individually with average-sized groups.
10. Two teachers working as a team can identify their areas of proficiency which would be of greatest benefit to the educational program.
11. The class size experiment will produce or refine instructional techniques to the benefit of the total instructional program.

To carry out this project, a full-time director has been employed. Dean Harold Moore of the Education Department at the University of Denver has agreed that the university will act in the capacity of institutional sponsor for this study. Standardized tests have been made available in all areas of study in order that we may have adequate statistical data from which to draw inferences when the study has been completed, and to guide us in the study itself.

We anticipate that, with 28 classes, with some 1,060 students participating in this study, and with the services of a full-time director of research, as well as the Educational Department of the University of Denver, the results of this study will lead us to new instructional techniques and an improved educational program. We may find out how to make better use of buildings, and whether or not teachers' morale and efficiency can be raised by better use of staff competencies. We realize that the employment of non-certificated personnel challenges educational tradition and mores. We feel that high caliber, non-certificated personnel involved in a complete in-service program of our own may help to solve the problem of teacher shortage if used properly.

This study will involve teachers, and others, who are willing to accept the spirit of research in their work. Of course, we recognize limitations in the study. In spite of, or perhaps because of, the inevitable frustrations and disappointments involved in a study of this type, we hope to find some answers which will help to benefit our school district and eventually be of value to other school systems throughout America.

CHAPTER XIV

Utah Uses State-wide Approach in Studying Utilization Effects of Junior High School Evaluative Criteria, Physics Films, and Core Programs

SIDNEY L. WYATT
WILBURN N. BALL
LERUE WINGET

THE Secondary-School Principals' Association of Utah, in cooperation with the Commission appointed by the National Association of Secondary-School Principals, has been making an effort since August 1956 to develop several staff utilization studies. A fundamental feature of the Utah proposals is that of coordinating the work of several agencies to carry out the studies.

It is believed by the participants in Utah that better studies can be conducted through coordinating the work of several agencies, including the Secondary-School Principals' Association of Utah, the State Department of Public Instruction, the three universities (Utah State University of Agriculture and Applied Science, University of Utah, Brigham Young University), and the schools participating in the studies. Not only does this coordination provide leadership in giving direction to the studies, but it also places these important state agencies in a position to implement the findings of the studies into the school situations in Utah. The work of coordinating the projects is being directed fundamentally through a state central committee composed of twelve individuals representing the different agencies.

The Secondary-School Principals' Association of Utah at the present time is pleased to be working with the National Secondary-School Principals' Association on three research projects: (1) junior high-school validation study, (2) physics study, and (3) a core study. Since the latter two developed out of interaction between the state and national associations in regards to the Junior High School Validation Study, that study is discussed first.

JUNIOR HIGH SCHOOL VALIDATION STUDY

For a number of years, there has been an apparent and widespread feeling of unrest among many of the junior high-school teachers in the

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state of Utah. They felt a sense of insecurity in not having a carefully developed, defensible philosophy of the purposes and functions of this important level of the educational system. Is the junior high school to continue to be a junior version of the high school as its name implies? Is it to be a mere extension of the elementary school as some believe and practice? Or, does it have unique functions which differ from those of the elementary and the high school to meet the individual needs of these boys and girls in the early adolescent age?

The voice of Utah teachers was raised on a state level through the State Secondary Principals' Association. A committee of principals and teachers, since termed the Evaluative Criteria Committee, was set up in Utah to study the junior high school and to attempt to define a high quality program. That study grew much like "Topsy." After a survey of the national field, it was believed that an attempt should be made to set up evaluative criteria for the junior high schools of the state. That was more than three years ago.

Plan To Include all Concerned

The Evaluative Criteria Committee, who were working as agents of the Utah State Secondary Principals' Association, soon concluded that as many agencies and people concerned with the junior high school as possible should be included in the study. From the beginning, the office of the Utah State Superintendent of Public Instruction was brought into the study by using the director of secondary education as an adviser and member of the committee. The various state subject-area department directors were also brought in as consultants. The Utah Research Council, the three major universities of the state, parent-teacher organizations, and approximately twenty subject-area committees with membership from these various agencies as well as junior high-school principals and teachers from numerous schools and districts were used.

At the end of two year's work, a tentative edition of the criteria had been developed and one pilot school had served as a "guinea pig" in an experimental study. The criteria seemed to be standing up under scrutiny rather well, but it was apparent that they needed further refinement.

New Funds Brought New Life

The limited funds of the Secondary Principals' Association had been exhausted, and, although the study was well on its way, it seemed likely to die for want of financial aid. At this time, aid came which brought new life into the study. It came in the form of a grant through the National Association of Secondary-School Principals from the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. This grant was obtained through the efforts of the Utah state director of secondary education and others. While preparing the request for the grant, those responsible recognized two other worthy studies and included these studies in the request. Hence, in addition to

the junior high-school study, the Secondary Principals' Association also assumed the responsibility of directing two others.

To arrange for coordination and to establish policy for the studies, a central committee was appointed. In turn, an executive secretary and an assistant executive secretary were appointed to give leadership to the studies. A validation and revision committee was also set up for the criteria study which included a representative from each of the three universities in the state, a teacher from each of the three pilot schools to be evaluated through the use of the criteria, three members from the Evaluative Criteria Committee, the assistant executive secretary, and others.

Purposes

The purposes of the project are: (1) to validate the *Criteria* and make necessary revisions prior to final publication; (2) to determine the effectiveness of the *Criteria* as an instrument for up-grading the junior high schools in the state of Utah; (3) to determine the effectiveness of the *Criteria* as an instrument for improving the in-service education and professional growth of all school personnel; (4) to use the *Criteria* as a basis for evaluating and modifying present practices and procedures so that the needs of the junior high-school pupils may be more adequately met and the time and abilities of staff may be utilized more effectively; and (5) to determine the feasibility of requesting the State Board of Education to adopt the *Criteria* as the official instrument for the evaluation of the junior high schools of Utah.

Research Design and Testing Program

The research design and testing program is designed to interpret and evaluate the results of this study to determine if the following outcomes, which seem desirable and possible, can be well appraised through measurements employed: (1) a degree of clarification and greater specificity both in written documents and in the understandings of the school staffs as to the purposes and nature of each particular junior high-school program; (2) more precise awareness of the professional competences of staff members and more effective use in the school of these various specific abilities and interests; changes in teacher loads and in deployment of services may be expected; (3) increased and more effective use of facilities, materials, teaching aids, and other resources helpful to the school program; (4) improved staff morale, involvement, and commitment to the developing program; and (5) improved pupil achievement in meeting the goals of the program and in attitude toward it.

A summer workshop at the sponsoring institution of higher learning, Utah State University, was held to orient those involved in the revision study. Off-campus courses are to be held during the winter quarter of the current school year for selected teachers in the various subject-area fields. One course for each university is planned. During the year, the state subject-matter curriculum committees will take a close, second look

at the area in which they are most interested. During the summer of 1958, a three-week workshop is to be held where members of the steering committees of the three pilot schools, representatives from the off-campus study courses as well as members of the central committee and the validation and revision committee will attempt to edit and revise the *Criteria*. The revised *Criteria* will then be presented to the State Board of Education. Already this body has given the Secondary-School Principals' Association commendation for the work already done. It is anticipated that the *Criteria* will be adopted as an instrument to accredit the junior high schools of the state of Utah.

It is anticipated that the *Criteria* will be used to: (1) determine the characteristics of a good junior high school; (2) appraise the effectiveness of the junior high-school program in terms of its objectives; (3) determine the means and processes by which improvements, where needed, can be effected; and (4) assist in such continuous growth as will merit consideration for state accreditation for the junior high school.

The Physics Study

Like many other states, Utah has been and is woefully short of trained teachers in the field of science, as well as in many other fields. In a survey made of sixty-one physics teachers, forty-one per cent had less than a minor of college training in the subject taught. The Encyclopedia Britannica physics films came to the attention of the officers of the Utah Secondary-School Principals' Association through the state director of secondary education. An application was made, in connection with the junior high-school evaluation study and the core study, for a grant from the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School.

When the grant was approved, the Secondary-School Principals' Association set up an organization through their central committee, directed by their executive secretary and assistant executive secretary. The Brigham Young University has served as the sponsoring institution. A physics coordinating committee was effected to determine the purpose and direction of the study. Selected high schools of the state were invited to participate either as experimental schools or as control schools. The response to the invitation was enthusiastic. A three-day workshop for the purpose of orienting those participating was held during the month of August on the Brigham Young University campus. The other two major universities within the state cooperated in the study as did the State Department of Education and many of the school districts of the state.

The purpose of the project is to determine, as far as possible, the effectiveness of the use of the films when used in actual classroom situations. The study is designed: (1) to determine to what extent the 162 films will accelerate student subject-matter mastery in physics; (2) to what extent the films influence students in selecting science as a

vocational career; (3) to assist teachers in the mastery of subject-matter for teaching purposes; and (4) to make an evaluation of each individual film.

Nine experimental schools were selected to use the films during the current school year, as well as eight comparable schools for control purposes. For experimental purposes, the schools have been divided into three classifications as follows: (1) schools where physics has not been previously taught, where teachers are not formally trained in the area of physics, and where there is very little physics equipment; typically, these are small schools; (2) schools where physics has been taught, but where teachers lack formal training in physics and where equipment is meager; typically, these schools are rather small or medium-sized high schools where physics has been taught only every year, or at the best, one class each year; and (3) schools with well-trained teachers and adequate facilities where, traditionally, a good job of teaching physics has been done; typically, these schools represent the larger schools in the state.

A comprehensive testing program has been set up to be administered and evaluated by the testing bureau of the Brigham Young University. This included a physics test for teachers to determine whether or not these films have any effect upon teacher growth; mental maturity tests for matching students of comparable mental ability; physics tests at the beginning and end of the course to determine achievement in physics as a result of the use of the films; and vocational tests at the beginning and end of the study to determine if the physics films have had any effect in changing the interests of the students regarding science or physics as a career.

The Core Study

As part of the teacher utilization study in the state of Utah, the secondary principals, through their central committee, set up a study of the core program in the four junior high schools in the Weber County School District. This study embraces approximately eight hundred seventh-grade pupils and twelve teachers. Many junior high schools within the state have had longer than usual blocks of time for some pupils while teaching the assigned subjects in the traditional manner. Some have taught common learnings within a single longer period with varying degrees of success. There are perhaps as many different core organizations and approaches as there are schools which attempt the core organizations. Some schools have tried the common learning practice and have abandoned it because of the insecurity both teachers and pupils have felt through lack of adequate training, traditional expectations of pupils, and poor facilities.

It was believed by the committee that a real need exists, especially with the seventh-grade pupils, that can better be met through core organization and philosophy than through the traditional departmental-

ized procedures. Some of the felt needs which an attempt is being made to meet are: (1) *orientation,* bridging the gap from the security of the one teacher elementary life to the exploratory and rapidly maturing early teen age; (2) *guidance,* making it possible for the teacher to know her pupils better through a longer period of time and by special training of the teacher; this is also done through the use of specialized techniques; (3) *community resources,* the use of community resources, which can be well surveyed and utilized through this organization; (4) *resource material,* the development of resource material which is utilized in units of the core; (5) *teacher utilization,* the orientation, in-service training, and utilization of teachers so as to instill in them a feeling of security as well as a feeling that they are working for the accomplishment of definite goals; and (6) *individual pupil needs,* a more flexible program and a better understanding of the pupil insures a better course of study.

This study is under the sponsorship of the University of Utah and is directed by the executive secretaries. A committee within the school district consisting of the superintendent of schools, director of secondary education, guidance director, the principals of the four junior high schools, and a core teacher from each of the four schools are coordinating the study. A two-day workshop was held in which all core teachers in the district are being orientated in the study. A testing program is planned to help in an appraisal of the effectiveness of the core in meeting the needs above mentioned. As a further aid, the University of Utah will give an off-campus course in the core for participating teachers as well as others who are interested.

1957 Summer Workshop. Planning for the workshop attended by forty classroom teachers to discuss what each project teacher could do in working with future-teacher trainees in St. Paul, Minnesota.

Part III

Related Professional Interests in the Study

Students and teachers in a biology class in the Snyder, Texas, High School develop plans for more student responsibility in directing learning experiences, not only to improve the results of instruction, but also to relieve teachers of unnecessary work. (See Chapter X.)

CHAPTER XV

The Fund for the Advancement of Education Helps Schools Plow New Ground

LESTER W. NELSON

AS A philanthropic organization, The Fund for the Advancement of Education, was established by the Ford Foundation in 1951 to work in the field of formal education. The following excerpt from the Fund's *Report for 1954-1956* indicates the scope and general direction of its activities in this field: "During its five years of activity, the Fund has concentrated on five problems which seemed of major importance in education: 1. the improvement of teaching; 2. the improvements in the curriculum; 3. the clarification of the purposes and functions of education; 4. the equalization of educational opportunity; 5. the management and financing of educational institutions."

Although the Fund has supported efforts aimed at improvements in each of the five areas listed above, it has given substantial priority to efforts in the first of these areas; namely, *the improvement of teaching.* In this area—the improvement of teaching—better answers have been sought to three basic questions: (1.) How can our schools and colleges attract a larger number and a greater proportion of the ablest people into teaching? (2.) How can our teacher education institutions provide better preparation for teaching? and (3.) How can our schools and colleges make more imaginative and effective use of the professional services of teachers?

Fund grants to the National Association of Secondary-School Principals in support of the projects sponsored by its Commission on the Experimental Study of the Utilization of the Staff in the Secondary School have the obvious and direct purpose of encouraging "more imaginative and effective use of the professional services of teachers." In making these grants to the Association on behalf of Commission activities, the Fund proceeded from a number of clearly recognized premises. *First,* it was believed that secondary-school principals occupy the most critical position from which leadership and support for effecting changes in our secondary schools must come. *Second,* it was believed that the National Association of Secondary-School Principals, because of its long tradition of support and effective efforts aimed at improvements in secondary education, oc-

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cupied a critical position from which to encourage and support experimentation in this field. *Third,* the belief existed that principals, themselves, because of their key position in the schools, could best identify the most promising points of attack on the problem and could best provide the skills essential for mounting and sustaining such attacks. *Fourth,* there existed a faith in the ability of the Association, through its manifold channels of communication, to transmit the findings of experimentation and to achieve the spread of desirable practice where proper experimentation might disclose such desirability. *Finally,* the conviction was held that the Association was committed to support of such experimentation and spread of improved practice. These, briefly stated, represent the articles of faith underlying Fund support to the Commission through grants made to the Association.

While it has been a matter of major satisfaction to the Fund that mutual willingness has supported continuous liasion between the Fund and the Commission, it has been a much greater cause for satisfaction that the initiative and leadership required for identification of promising experimentation have come from the Commission. The role of the Fund in this fruitful association with the Commission has been that of providing funds for support of the various Commission-sponsored projects, required for their coordination, experimental development and evaluation, including assistance in publication and distribution of findings. Such costs for experimentation are bound to be substantial and, in practically all cases, are apt to lie beyond the ability of normal operating budgets to absorb. It is recognized that the experimental dollar is the most difficult dollar to come by in hard-pressed tax-supported school budgets. In this sense, Fund grants provide risk capital beyond the ability or readiness of local schools to provide themselves, until the results of experimentation have clearly shown its value. When this has been done, the element of risk becomes one of normal operations for which the schools themselves can be properly expected to assume responsibility.

In addition to the provision of funds, administered and disbursed by the Association in support of approved school projects, the resources of the Fund have been made available to the Commission and to participating schools in other less evident ways. Funds have been made available to assist in publication and distribution of the excellent Commission brochure, *New Horizons for Secondary-School Teachers.* Services of persons on the Fund staff or serving the Fund on an *ad hoc* basis have been made available, upon Commission request, for consultation with participating schools. On occasion, also upon Commission request, Fund personnel have assisted in visiting schools which have submitted proposals to the Commission or which have been in process of formulating proposals to the Commission. Upon invitation of the Commission itself or of the participating schools, members of the Fund staff have profited greatly from visitation, observation, and discussion with faculties of the schools which

are involved in experimentation. In many situations, proposals coming to the Fund directly or inquiries directed to the Fund have been directed to the Commission for study and possible action. Fund publications have been freely made available and distributed to participating schools whenever requested by the Commission. Although such mutually cooperative activities are not so readily observed in action as the more direct acts of grant making, they nevertheless serve to keep the Fund's feet in the mainstream of our educational effort; namely, the schools where the job of education goes forward. They also serve as important means of transmitting intelligence of what is being done to persons and places not otherwise acquainted with or aware of such efforts.

One of the most fruitful aspects of the Fund-Commission relationship may be illustrated by a November week during which the Commission's Director, Dr. J. Lloyd Trump, and the writer, visited three of the Commission-sponsored projects in Utah, Colorado, and Nebraska. During this very crowded week, opportunity was given for visits to the participating schools' classrooms, conferences, and discussions with administrators and teachers, contacts with evaluation teams, conferences with representatives of the state secondary-school principals association, state departments of education, university and teacher college personnel. At the same time, Dr. Trump attended a number of sessions at which other proposals to the Fund, lying outside the Commission's area of activity, were discussed with the institutions or groups having an interest in them. Thus, both the writer and the Commission's Director served as resource and consultant personnel in connection with Commission projects and non-Commission proposals. This pooling of effort illustrates the possibilities inherent in the kind of relationship to the building of which both the Fund and the Commission have made significant contributions.

The Fund for the Advancement of Education is supporting the efforts of the Association and the Commission because of a basic belief in the everlasting need to re-examine the premises on which our secondary schools function. These premises underlie and determine the character and content of the curriculum, the nature of the schools' organization, the pattern of staffing, the procedures employed in the utilization of teachers, the approach to evaluation, the relations of the school and the community, and the uses made of community and technological resources. Schools exist for the purpose of providing ever improving opportunities for learning, primarily for students, but for teachers also. Learning takes place only when change occurs in the learner. Static schools cannot support improved learning merely by refining existing practice which is tatamount to a dedication to the *status quo*. Significant change, whether in organization, curriculum, utilization, or evaluation, would seem to require constant effort, hard effort, to redefine our purposes and our procedures. Only as this effort is supported, encouraged, and maintained,

will our schools provide the kind of learning opportunities which our children require and society demands. In a broad sense, then, the Fund, in supporting the Commission-sponsored projects in staff utilization, is committing itself to more than support of the particular projects represented in this group of schools. Basically, it is committing itself to support of promising experimentation and change as an essential method toward improvement. It is in this sense that the phrase appearing in the caption to this portion of THE BULLETIN; "plow new ground" is most appropriate. Plowing the new ground can be done only by the schools themselves. Identification of the most fertile ground to be plowed is a task for both the schools and the Commission. Helping to provide the resources for the plowing is the great privilege and opportunity of the Fund. The past two years of such partnership have yielded results of substantial significance and greater promise. The Fund for the Advancement of Education is pleased to have the privilege of membership in the enterprise.

CHAPTER XVI

Interest of State Departments of Education in Staff Utilization Studies

GEORGE L. CLELAND

DURING recent months, much has been written concerning the problems of education. Typical of these are problems arising from the tremendous increase in the numbers to be educated, the inadequacy of present facilities, and the shortage of qualified teachers. Proposals for the solution to these problems are many and varied. They include Federal aid, use of non-certificated teaching personnel, instruction by television, the twelve-month school, as well as many others. The experimental studies in staff utilization conducted by the NASSP constitute another approach to meeting the problem of teacher shortage.

Since education is a state function, any condition which affects the quality of education, whether it be a lack of qualified teachers, poor facilities, or inadequate finances, is of deep concern to state departments of education. Any proposal which has as its ultimate objective the improvement of the educational process will be received favorably.

In order to understand the relationship of state departments of education with the present experiments in staff utilization, it is well to keep in mind the basic purpose for which state departments exist; namely, improvement in the quality of education. All things which state departments do—the certification of teachers, requirements in the field of curriculum, and all of the standards and regulations pertaining to the operation of a school—have as their ultimate purpose, better education for boys and girls. With this in mind, let us examine briefly a few of the areas which are of a paramount concern.

TEACHER PREPARATION

In order to insure competent instruction, the state sets up the requirements under which it is possible to teach. Over the years, these requirements have constantly been increased so that the minimum today in most states is a college degree. Few would argue that increased standards of professional qualifications have not had a positive effect on the quality of instruction. There is a very real danger that, under the pressure of increased enrollments, requirements may be lowered, with expediency

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substituted for long-range planning. This can be particularly true at the local level where the pressures are oftentimes intense. The chief responsibility for upholding the gains which have been made is with state departments; the teaching profession has a right to expect that high professional qualifications will be maintained.

The use of teacher aids is a point. What are the responsibilities which can be assumed by teacher aids and those which rightfully belong to the teacher? What is the relationship to the instructional process of grading of papers by clerical help? When a person is left in charge of a group of students for study purposes, is this "teaching"? More important, what are the effects on student learning and the attitudes developed by the public relative to professional qualifications? These are not questions which have simple answers. It would appear that the role of the state department is in the area of "exercise of judgment." It has the responsibility, as previously mentioned, of seeing that the quality of education does not suffer—hence, the imposition of regulations and standards—and at the same time, of permitting deviations for experimental purposes when such deviations offer the possibility of improvement.

Teacher Load

This is an area in which there is a great deal of variation. There is also considerable disagreement as to what constitutes a normal teaching load. Factors usually considered are the number of classes per week, number of students handled per week, number of different preparations, amount of time required for preparation, and the amount of time given to school duties other than teaching. It is in this last category where teachers register the most complaints and where they need the strong support of state departments of education. It is unquestionably true that, in a great many instances, energy is dissipated and teaching efficiency is greatly lowered by asking teachers to perform tasks that have little or no relationship to the teaching process.

Standards pertaining to teacher load have as their objective the protection of the pupils so that the quality of instruction will not be impaired. These standards need to be flexible and not absolute. No state department regulation should ever be considered an impediment to progress. Since the concern of the state department relates to the quality of education available to all the boys and girls of the state, it would be unthinkable that schools would be denied opportunity to experiment with new approaches.

There has been wide acceptance of a class size of twenty-five students, with one hundred fifty the maximum number of students handled by one teacher during the day. There is little evidence that this standard should be applied to all teachers in all subject matter areas. However, if education is more than the mere imparting of information, the personal relationships between student and teacher must always be considered.

Curriculum

Since education is a state function, the responsibility for providing a curriculum framework rests with state departments. Usually a certain number of Carnegie Units are required. These requirements, in terms of subjects, are based on the premise that the learning experiences derived provide certain minimum competencies needed by all to function effectively in a democracy. However, there is little evidence that the mere requirements of certain "subjects" greatly modifies behavior. What does modify behavior is what takes place in the classroom under the guidance and direction of a skilled teacher, and, in any experimental approach to problems of education, the teachers will always be the key person.

New curriculum patterns are necessary. Tremendous changes are occurring with increasing rapidity, and, unless schools are willing to make curriculum revision in light of those changes, social forces eventually and inevitably force changes to be made. All of which means that state departments of education must provide the stimulus for schools constantly to evaluate their program in terms of the demands of the social order and the needs of individuals. Will French[1] has stated that the major function of the secondary school ". . . is to help all youth attain a common high level of competence to think and act in the face of problems and situations of daily life. . . ." This means much more than learning certain bodies of knowledge and mastering certain skills. It means the ability to live healthy and useful lives. It means competence in some line of work. It means desirable attitudes and ideals, consideration for the rights of others, and respect for law and order. It means the ability to live successfully with others, and to plan and work together for the common good.

One of the persistent criticisms of secondary education is that it is too traditional, that curriculum patterns, once established, are difficult to change, and that it does not adequately reflect the demands of the social order and the needs of individuals. State departments of education must accept their share of the criticism. To a large extent, the quality of education in any state reflects the professional leadership of state departments of education. This does not mean the detailed development of a curriculum at the state level which is handed down to the schools within the state. This is the responsibility of the local school. It does mean that the state department has the responsibility for the creation of a climate which encourages and stimulates curriculum study at the local level.

Experimental Studies

The present experimental studies in staff utilization under the sponsorship of the National Association of Secondary-School Principals should not only have the interest but also the cooperation of state departments

[1]Will French, "The Role of the American High School" *The Bulletin of the National Association of Secondary School Principals*, February 1955, p. 8.

of education. We need more carefully conducted experiments in all aspects of education. The present studies are particularly significant at the present time because of the terrific impact of increased enrollments and an insufficient number of well-qualified teachers. The chief concern of state departments of education will be that expediency not be substituted for sound educational planning and that, under the guise of "progress," conditions are allowed to develop which, in the years ahead, will weaken rather than strengthen the whole process of education.

While there is nothing sacred in established patterns, there is no merit in change just for the sake of change. Educational progress can be measured only in terms of what happens to boys and girls while they are under the supervision of the school. Regulations and standards exist not for the protection of the teacher, but for the protection of the student, in order that the quality of education will not be impaired. The studies in staff utilization will make a significant contribution if, through the use of different techniques in scheduling, in curriculum patterns, and in the instructional process, the quality of education will be improved even with increased numbers of students.

CHAPTER XVII

Accreditation Standards and Staff Utilization

RAYMOND G. WILSON

THE regional accrediting associations are concerned with the improvement of education. As a means of accomplishing this, they evolve standards, regulate practices, encourage the staffs of their member schools to engage in programs of self-evaluation and improvement, and serve as a voice for the profession by speaking out in favor of desirable developments and against intolerable or threatening conditions. While they are not the only agencies striving for such results, their long period of activity, their regional and national scope, and other factors have given them a leadership status that has enabled them to contribute significantly toward these ends.

It probably can be said with some degree of accuracy that these organizations come nearer than any other agency to providing us with a national pattern of education. As is well-recognized, we have preferred local control of schools in contrast to the centralized systems of other countries. Yet there does exist an American system of education, having many common elements, and being reasonably interactive with the culture. Through their more than sixty years of existence, these voluntary organizations have been helping to provide a workable substitute, in the democratic tradition, for such centralization.

There is occasional criticism of these associations on the grounds that their standards and accreditation procedures seem to inhibit ready adoption of new practices and to stifle experimentation. This, however, is not generally a valid criticism since all of the associations, as a matter of policy, actively encourage soundly conceived and carefully evaluated experimentation. As is understandable, they expect to be apprized of plans for such innovations or experiments, to be kept informed of developments and results, and to reject or approve finally.

For some time, the annual reports of the Commissions on Secondary Schools of these organizations have been pointing up problems in the adequate staffing of member schools. Since these schools generally are in a somewhat better position to compete for teachers than non-accredited institutions, the problems have not been acute, but have been of sufficient

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proportions to warrant some concern. When coupled with their basic concern for improving the *quality* of teaching, this emphasizes the concern which the associations are certain to manifest in such studies as those currently being conducted by the National Association of Secondary-School Principals.

While the associations are quite likely to approve this experimentation under their general policy, it must be recognized that this kind of project creates some problems in relation to certain of the usual standards of these bodies. These particularly are such standards as those that govern class load, teacher preparation, salaries of the instructional staff, length of class period, and the like.

The maximum number of pupils per period and the total number per day which a teacher may be expected to work with usually are specifically stated. In like maner, standards usually are quite definite as to the preparation of teachers, the minimum salary they shall receive, the length and arrangement of class periods, and the total load of pupils.

An examination of the kinds of projects now under way, as described in the first section of this publication, will indicate why some questions ultimately must be raised in respect to the standards mentioned here. Several of the schools are experimenting with class sizes considerably in excess of the usual maximum. Non-certificated personnel are being used to perform some of the functions usually associated with instruction. Not only are such persons not certificated, but also their pay scale is below that of regularly certificated teachers. These are mentioned, of course, not in order to raise objections, but to point up the kind of problems with which the accrediting associations are faced.

It is readily admitted that many of the standards of these associations are not based upon definitive research, but have grown up as the best assumptions possible to make at the time of their adoption and under a given set of circumstances. It is quite possible that such studies as the present ones will be of real help in furnishing us better answers to these as well as other questions. However, since these standards seem to have the sanction of people both within and without the profession, it is well to recognize that the introduction of practices drastically different must be done in full recognition of the fact that these represent innovations which may be slow of acceptance. In respect to this, it might be well to point out that the present emergency as to adequate staffing probably cannot be depended upon to give too much impetus to this acceptance. If the letters which come into association offices can be considered representative, their members generally seem to want the organizations to "hold the line" against emergency measures and to see that standards are enforced as fully as possible.

Should this be regarded, then, as an insurmountable barrier to the ultimate adoption of the practices now under study? To the contrary. This is said just to make clear that the studies are impinging upon areas

where long-held assumptions now must be re-examined and that they will not be yielded easily nor just because emergencies exist. The challenge to the participating schools and the Commission is to do what they are committed to do anyhow—to try to be creative, to evaluate the experimentation with soundness, and to keep such case histories as will be of genuine help to the profession.

To do these things well should insure that the accrediting associations will continue to hold an open-minded attitude toward these projects. If the results serve to provide a demonstrably better education for secondary school youth, then the purposes of the Study and of the accrediting associations run along similar paths and the interests of the nation are well served.

CHAPTER XVIII

Higher Education's Relationship to Staff Utilization Studies

MATTHEW P. GAFFNEY

IDEAS, followed by trial, and experiments in education and in other fields generally develop out of common background of thought and opinion. Therefore, when something novel or unusual is being tried in one school or one section of the country, it is not unusual to discover that a similar plan is being tried in several other places about the same time.

Approaching my subject, therefore, I shall take the point of view that if institutions of higher education are interested in the same ideas and are working on the same projects that take up the time of the Commission, it's an indication that the said institutions of higher education must be in approval.

Since my experience is at Harvard, I shall primarily use Harvard for purposes of illustration although similar illustrations could be drawn from Peabody Teachers College in Nashville, The University of Chicago, Stanford, and other institutions.

For a number of years, Dean Keppel of the Graduate School of Education at Harvard in his annual reports to the President of Harvard stressed the needs of a "breakthrough" in secondary education. In his report of the year 1954-1955, he asks if schools should not consider a reorganization which would lead to teams of teaching personnel, including a leader, perhaps certain subject specialists and a staff of junior status including young teachers and "aids." Leaders of such teams could be in direct relationship with the pupils, could handle many aspects of relations with parents and could give supervision to the work of the junior members, many of whom will teach for only a few years. Each of the leaders would be directly responsible for the quality of the work done in his division of the school's work, and would be expected not only to supervise the inexperienced teachers or teachers' aids, but also to play a major part in pupils' lives by themselves teaching in the classrooms for which they are responsible. The teams and their leaders would have different responsibilities at the several levels of school work—elementary, junior high, and high school. In the last case, for example, the leader might be, in effect, a new type of chairman for a subject area. The young

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career teachers, who start at junior status, could aspire to their standing in due course.

The Dean goes on to emphasize that such a personnel reorganization is a different matter from increasing the salary of teachers on the basis of "merit" alone. What is needed is a change of role, a change of position from lesser to greater responsibility in the school. To such a new role, a young man or woman may aspire to be promoted.

The Dean discusses in his report the danger of putting into the classroom with complete responsibility over the teaching of twenty-five to (alas) sometimes fifty pupils, teachers who may be ill qualified to deal with students. He feels that the long-run solution to the personnel problem in the schools is not only recruitment of outstanding young people, but also a thorough-going reordering of the personnel arrangements in the school.

The ideas of the Graduate School of Education are, however, more definitely expressed in a working document showing how institutions of higher education could devote their energies to the analysis of the problem as a whole. Reading the document one might easily believe he was reading the memorandum drawn up by the Commission. This is another way of saying that Harvard must approve of the philosophy behind the work of the Commission since it parallels so closely their own. Quotations from this Harvard memorandum will bear out my point.

Pilot programs—"model" schools—in several parts of the country will be needed.

We are persuaded that the time is ripe. The National Citizens Commission for the Public Schools, and the state and national conferences of citizens, have prepared the public mind. The personnel in the schools are far more ready than they were a decade ago to reassess their policies and procedures.

We are persuaded that first attention should be given to the training, organization, and use of personnel in the schools.

The crucial problem that seems to require first attention is the use of personnel. Specific programs of experiment, development and evaluation by professional schools, will be described by their programs of recruitment and selection. They directly influence the activity and the standing of the profession they serve.

We have come to realize that faculty members cannot help to solve some of the larger problems of the schools by contributing only energies left over after meeting full-time commitments to research and teaching. They must be relieved of some of their present responsibilities.

As we analyze the steps to be taken, we find that each returns to the question of personnel. The schools can carry out the assignments of the people only to the extent that they have a staff with the necessary abilities organized in the most effective way. An attack on this problem will lead inevitably into other essential concerns of policy and operation.

There is every indication that, in the next half century, the need for skilled personnel in all fields will far outrun supply. The schools are even now in a

poor position to compete for well-educated and well-selected young men and women. If the present rules of the game are followed, that position will grow worse rather than better.

Near the horizon is a gigantic school problem: how to use the talents of older people. Two possibilities are relevant here. The first is the employment of men and women nearing the age of retirement who are still well able to make an important social contribution. The second is the use of talents of women whose children are no longer in need of constant attention. The schools have made relatively little progress in capitalizing on such community resources. In particular, they have not tapped the supply of persons whose careers are in others fields, but who might be useful to the schools in part-time or auxiliary capacities.

All these considerations suggest not only a change in the role of the school in the American community, they also suggest the need for a major change in the sources of personnel for teaching, in the tasks assigned to them, and the way in which administration and maintenance of policy is exercised.

There is nothing in the present pattern of teacher recruitment which solves the problem of quality.

A cynic has remarked that the fairest comparison of personnel policies of the public schools is to the old army, in which one could tell the income of the soldier by looking at the sleeves of his uniform; on one were bars showing the number of re-enlistments, each of which brought a raise in pay. On the other were bars representing overseas service, and sometimes wound stripes. One can similarly estimate the salary of teachers by their years of service and the extent of their graduate studies. This is not a personnel policy exciting to the energetic young man. The low salary ceiling is bad enough, but even worse is the lack of advancement, the lack of a sense of goal, and the absence of the increased responsibility and the opportunity to use special abilities which usually accompany merit and experience.

Schools seem to operate on the assumption that all teachers are the same, and all teaching jobs alike. Common sense, of course, denies the former; alas, the present situation does not deny the latter. A widening of the salary range would seem to call for a change in the personnel structure of the schools. The issue is, therefore, how to improve our present arrangements so that a brighter future may be offered to the young career teacher, and how, at the same time, to handle efficiently not only the large number of teachers who stay on the job barely long enough to become valuable to the schools they serve, but also the skilled and unskilled personnel from all walks of life who can contribute to the teaching of the younger generation.

In futher speaking of the possibilities of a team plan, the memorandum continues:

A team plan is one in which teaching personnel of different levels of ability and training are assigned under the direction of a leader to those tasks for which they are best fitted. Class size would vary according to need. Special programs would be established to recruit and train women whose children no longer need full-time attention, as well as others in the community with special skills now needed in the classrooms. By keeping the span of control of the leader to a reasonable number—perhaps six to ten adults—we would hope to assume control over the quality of teaching and the balance of the curriculum.

This would test the plan of rewarding merit in career teachers by establishing differing roles for those who show special ability in the life of the school.

The team plan would test the use of a variety of mechanical aids to help in the process of teaching.

Such a pattern of teams or merit plans would bring the personnel structure of the schools into better alignment with the lessons learned in such enterprises as business, government, and the military. They have found that too large a span of control (*i.e.* the ratio of leaders to those lead) is unwise.

Some interesting exploration into the use of auxiliary personnel has been undertaken in Bay City, Michigan. Such programs can undoubtedly contribute to the solution of the over-all personnel problem. They need further development by organized programs of recruitment and special training.

We propose that the schools undertake a structural reorganization which would create teams of teaching personnel, including a leader, one or more career teachers, subject specialists, a number of young and inexperienced teachers, and members of the community who can contribute to the work of the school. The leaders of such teams would be experienced, mature teachers of unusual talent paid on a higher salary scale. In the team organization, such leaders could at times be in direct teaching relationship with the pupils, could handle many aspects of parental relations, and could give close supervision to the work of the instructional staff. They would be directly responsible for the quality of the work done in their division of the school work, and should be expected to supervise the inexperienced teachers or teacher's aides, in addition to teaching in certain classrooms.

In addition to the team leader, the staff on each teaching group might include:

1. Experienced, mature teachers of better-than-average talents (senior teachers). In the aggregate these will make up the main core of the teaching profession.

2. Experienced teachers of modest ability, whose contribution to the welfare and growth of pupils can, nonetheless, be worth while.

3. Teachers with relatively little experience (*i.e.*, beginners in their first, second, or perhaps third year of teaching), whose preservice training seems to qualify them for one of the first two roles.

4. Professional interns (or equivalent): those currently engaged in programs of teacher training.

5. Fully trained teachers whose responsibilities prevent them from doing full-time professional work, but who are able to work on a part-time basis.

6. Adults without "professional" preparation (teacher aides) who are able with minimum training to assist in various routine and nontechnical aspects of the work.

7. Adults whose regular careers have been or are in fields other than education, but whose special talents and interests lie in fields where the school staff has insufficient strength or training. This group might become part-time members of the teaching team if appropriate arrangements can be worked out.

In summary, then, a staff might include fully trained and fully qualified teachers of varying levels of competence, teachers in training, and adults with little or no special training in education serving as aides or part-time specialists. These individuals would differ from each other not only in training and relative competence, but also in the amount of time they would be able to devote to the team's activities.

The leaders of the teaching groups, as well as their associates who show unusual merit and teaching skills, could properly be put on substantially higher

salary scales than the "junior" teacher whose duties would probably be largely restricted to a smaller number of pupils and to lesser responsibilities.

The thought and planning thus expressed in the working document of the Harvard Graduate School of Education resulted in a collaboration of the faculty of the Graduate School with a group of neighboring public school systems. This program has been designated "Suprad" (School University Program of Research and Development) and like the work of the Commission has financial support from the Fund for the Advancement of Education.

It becomes evident that the concern felt by the Harvard Graduate School of Education in the field of personnel bears a close relation to the programs sponsored by the Commission in Newton, in Jefferson County, Colorado, and other places.

When we turn to the report of the First General Planning Conference of the Peabody-Public School Cooperative Program under the direction of the George Peabody College for Teachers in Nashville, Tennessee, and look at reports on tentative project plans, one again might be reading a memorandum of the Commission as is seen by the following quotations:

Three elementary schools in the district were experimenting with a different pattern of teacher and curricular organization to be used with closed-circuit television instruction and teacher aides.

The school was preparing to experiment with the use of highly skilled teachers as in-service assistants for other faculty members.

Included were plans for (1) the use of instructional secretaries in both high schools and elementary schools, (2) the use of the *Encyclopedia Britannica, Introductory Physics on Film,* in the high schools of the county, and (3) the use of a native speaker of a foreign language from the community to instruct pupils in that language in two selected grade schools in the school district.

Plans are under way in the district to provide special educational opportunities for gifted children through the use of special classes adapted to their needs.

This school district plans to use the *Encyclopedia Britannica, Introductory Physics on Film,* in order to: (1) encourage more students to enroll in these classes, (2) help teachers with limited preparation in physics to do a better job, and (3) use one master teacher of physics as a coordinator in addition to the teaching of his own class.

The third project for this county involves extensive and systematic use of audio-visual aids. This project is referred to as "An Experiment in the Use of Motion Picture Films in Teaching Physics.

Providing released time for selected classroom teachers to assist other teachers and staff members in an attempt to improve the quality of teaching in the elementary school.

Two other projects involve extensive use of instructional films in teaching.

I feel sure that if similar memoranda from other institutions of higher education could be studied, the parallel would continue. This all seems to me to throw considerable light on the question, What Do Institutions of Higher Education Think of the Work of the Commission?

CHAPTER XIX

Staff Utilization Studies Reviewed by a Secondary Education Specialist

J. G. Umstattd

THE worker in secondary education sees opportunities in the staff utilization studies that are reminiscent of those many educators enjoyed when invited to help improve methods of teaching and materials of instruction in some branch of the Armed Forces. In both cases there are fewer restrictions upon the idea of experimentation and, at the same time, a more liberal budget than could be found in any except a very few public schools. Almost any person would be interested in trying out his theories in a favorable climate and with the promise of funds to see the trials through to completion.

The Hope of Discovery

The challenge to test procedures, then, is the first reason for one's interest in these studies, and in the background is the hope of finding new and better ways for teachers to work and for students to learn. Rarely, if ever, have there been so many ideas being tried out at one time as in the staff utilization project.

Suppose, for example, someone had for many years been advocating the abolition of the study hall. He could visit the Alexander Ramsey High School near Saint Paul, Minnesota, or could read about their project in which one of the by-products is the discontinuance of the general study hall. He could also see how somewhat excessive enrollments in science are being taken care of by use of project supervisors and additional laboratory time. Some of his questions about closed-circuit television could be answered by an inspection of the Evanston, Illinois, or the Snyder, Texas, projects. At the latter place, he would also see the longer learning unit in action with an emphasis upon independent study in larger than normal classes.

Persons particularly interested in the use of tape recordings for the teaching of languages would have a great deal to learn at the Westside Community School in Omaha, Nebraska. In Newton, Massachusetts, portions of first-year English are being taught to classes of two hundred fifty or more through the use of cleverly designed graphic aids projected over the vu-graph. In the state of Utah, one would find an experiment

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in the use of films for the first course in physics in a number of schools with an appropriate number of other schools as controls.

A visitor could see a dual-purpose project in the St. Paul high schools directed toward the recruitment of capable teachers and the use of teacher's aides in various secondary-school fields. He would also be intrigued by the plan developed at Richwood, West Virginia, for supplying behind-the-wheel instructors for driver education by the use of carefully chosen and specially trained bus drivers. Anyone interested in secondary education could gain much from a careful study of class size at Jefferson County, Colorado, where methods are being varied to fit small, average, and large classes. No doubt by the time the visitor had finished his visits to these places, other experiments or demonstrations would have been set up elsewhere as parts of the staff utilization project.

It seems quite reasonable to expect new procedures and improved ways of learning to come from such an array of experimental studies. The hope of discovery motivates the project throughout.

The Spreading of Ideas Through Demonstration

One of the criteria suggested by the Commission on Staff Utilization to schools submitting projects was that they be willing to serve as demonstration centers for schools within their regions. Thus it is possible for any teacher, principal, or superintendent to visit any of the schools that are experimenting with new ideas or demonstrating new practices. It is quite probable that this phase of the study will become more important after the first year or two of work has established a program in each of the schools. Whatever the idea being tested or the practice being demonstrated, any school would feel somewhat freer to welcome visitors after the program had taken root.

The demonstration aspect of the utilization studies should be free of evangelism. The pitfalls of the practice, as well as the values, should be discussed. How the pitfalls were discovered and subsequently avoided and where pitfalls actually did exist should be made entirely clear to the visitors.

In the projects in which real values have been revealed, the welcome sign should be hung out for all interested school people and laymen in the immediate region. Even here, however, great care should be exerted not to claim more for the project than the statistical results reveal. It is conceivable that educational organizations, state departments of education, and even lay organizations might cooperate in planning visits to the schools where something quite worth while might be seen.

Proof versus Evangelism

In every one of the projects, much attention has been paid to evaluation. In the projects that are true experiments rather than only demonstrations, considerable attention has been given to the design for the experiments. It should be stated, however, that even in the most

carefully planned experiments, the interests of the students in the classes has been primary; and the statistical results, secondary. As a result, some statistical procedures have been sacrificed for the welfare of the student. With this reservation, the modified designs should yield real proof.

It is agreed that the improved morale that often follows stimulation of the evangelistic type sometimes does improve educational practice. But even so, it is hoped that some of the findings from these studies will be supported by solid scientific evidence. If this hope should be realized, the validated procedures will provide evidence that secondary education can be improved gradually. This outcome should be a boon to youth because "improvement" is being defined in the evaluative procedures as more effective and enriched learning.

Fresh Contacts with the Field

The published reports of the Commission and the publicity given the projects in other ways should cause college professors of education and of the liberal arts to renew their contacts with modern high schools. That many of these contacts have become seriously corroded cannot be denied. Much of the criticism of secondary education by college teachers comes from those who have not visited a high school since they were graduated from high school themselves.

One of the best values of the series of studies, therefore, would be to acquaint college teachers with modern high-school practices. This value would not only reduce the criticisms of the high school, but would also better prepare the college teacher for his part in the training of prospective high-school teachers. Towards this end, an organized effort should be made to get college teachers to visit the high schools where the projects are underway. Visits should not be limited to the successful projects, but the others as well should be seen if the complete picture is to be obtained.

New Content for Secondary-Education Courses

College professors who visit the projects will have a source of live content for their own courses. In this manner, his own vigor will be renewed and, as a result, student interest in his courses should be increased.

It is unfortunately true that some teachers of courses in secondary education rarely visit any high school. Consequently, what they teach is frequently obsolete. It simply does not fit the modern high school. The renewed content that results from visits to the projects, therefore, should be more effective in preparing prospective teachers for schools as they exist today.

In-service Education

In several of the schools that have projects underway, the project has become the center of a program of in-service education. In some of the

schools the practice is not limited to those faculty members involved in the project, but has become school-wide in its influence. This appears to be a salutary result of the work of the Commission. The in-service work in some cases has resulted in the gradual extension of the experimental procedures to departments not involved in the experiment. This has happened at Snyder, Texas, for example, where a practice, limited the first year to general science, will during the second year be extended to biology, Spanish, English, and social studies in the senior high school where the experiment was begun, and to at least one department, English, in the junior high school.

Another value that derives from the broadened understanding of the new techniques by in-service education is the greater ability of all members of the staff to interpret the new procedures to the community and to the student body. This outcome lays the foundation for general acceptance of the practices that are proved to be valid.

Gaining Community Acceptance

Related to the foregoing is the general idea of how to gain community acceptance of new practices found to be good. Not only does the faculty through its understanding of the practices help to win community support, but also, in some instances, the administrators have been quite careful to interpret the new practices to the community as a whole. This has been done first through the board of education by keeping that body thoroughly informed of both the failures and the successes, and by stimulating in them an experimental attitude so long as the welfare of the students is safeguarded.

Community support in some cases has also been fostered by nipping complaints in the bud. This is done by conferences during which full and careful explanations are given. An attempt has been made to keep the number of complaints to a minimum by carrying the project along without fanfare or undue claims.

Thus for the person interested in interpreting public education to the people, the projects in some communities have become real case studies. Out of this experience, in those communities at least, should come better understanding of effective methods for gaining the support of the community for the improved practices.

New Focus for Interest and Enthusiasm

The study should afford many teachers of secondary education the opportunity to further their own professional development. They will find in each new practice that has been validated in one or another of these studies a new and different focus for their professional interest. Where this result is achieved, both the teacher and his students should experience increased enthusiasm for secondary education.

CHAPTER XX

Others Are Also Extending Horizons in Staff Utilization

J. Lloyd Trump

THE NASSP Commission on the Experimental Study of the Utilization of the Staff in the Secondary School early set as one of its functions dissemination of information relative to staff utilization studies not only conducted under the sponsorship of the Commission, but also those carried on independently in local school systems or under the sponsorship of other agencies. This chapter presents a brief summary of such studies that have come to the attention of the Commission.

Difficulties encountered in gathering information for this chapter highlight once again the serious problem of communication among secondary schools in the United States. There should be an effective method for collecting information regarding experimentation of all kinds in secondary schools of the United States. No one knows at the present time all the research that is going on; compilation of the results of such research is not assembled and made available for common study and use.

The cooperation of The National Association of Directors and Supervisors of Secondary Education (NADSSE) was obtained in an effort to discover what staff utilization studies were being carried on in the various states of the country. At a meeting of that group in Washington late in February 1957, the writer explained the purposes of the Commission and described some of the experimental studies under way. On April 25, 1957, a letter was mailed to all of the state directors and supervisors of secondary education signed by W. H. Marshall of Florida, President; Frank N. Philpot of Alabama, Immediate Past-President; and John R. Luddington, U. S. Office of Education, Secretary of the NADSSE; and the author representing the Commission. This letter requested information about staff utilization studies in the various states. A copy of the Commission brochure, *New Horizons for Secondary School Teachers,* was enclosed with reference made to pages 18-22 which outlined the kinds of studies that would be of interest. The state directors were asked to name schools in their states where such studies were under way with the understanding that the author would then get in touch with the schools listed in an effort to discover the nature of the experimentation. A follow-up letter was sent

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on June 14 to those directors who did not reply to the first letter. As a result of these two letters, replies were received from nearly all of the states.

The state directors of secondary education were very helpful in identifying schools. On the other hand, it was surprising to receive in a few instances such replies as the following: "The information which you are requesting is not available at this time for _____." "So far as I know, there are no studies under way in _____ with reference to staff utilization." "I have no knowledge of studies in which you might be interested." "At the present time I do not have the information that you desire." "The information is rather difficult to get, but, if you will give us some time on this matter, I will try to be of help. It might be desirable to send a questionnaire directly to our schools."

Letters were subsequently sent to all of the schools mentioned in correspondence with the state directors and supervisors of secondary education. Again, a copy of the Commission brochure was sent to each school so that information might be available regarding the types of studies that would be of interest for this report. As a result of this request and a subsequent follow-up letter, replies were received from most of the schools named. Thirty-nine of the schools answered the inquiry form by indicating that the information given regarding their school was incorrect, that they were not conducting any studies concerned with staff utilization. Forty-six schools sent information regarding studies related directly or indirectly to staff utilization. These studies are summarized briefly in subsequent paragraphs of this chapter.

Television

Meriden, Connecticut, High School—Mark D. Bollman, Principal. Students in world history viewed telecasts two times each week over a commercial station. Class discussion preceded and followed the presentations, as did reading by students. The instructor believed that pupil interest in the course increased, achievement was higher, and, in general, instruction was more effective. From the viewpoint of the school, there was considerable difficulty in matching the school's program with that of the telecasting schedule.

New London, Wisconsin, High School—Austin F. Christ, Principal, and T. M. Loofboro, Superintendent of Schools. Closed-circuit television equipment has been installed in an effort to relieve study-hall supervisors from some of their responsibilities and permit more productive use of their time. A camera was set up in one study hall with controls and monitor in the principal's office where a secretary was in a position to watch the screen. Teachers are assigned study-hall periods and are responsible for seeing that seats are assigned and monitors appointed. Except for occasional checking, they then go about other duties more closely related to their instructional assignments. In the event of difficulty or question-

able circumstances, the principal or someone from the office investigates the situation. In spite of some mechanical difficulties with the equipment, the results appear favorable. There has been good student acceptance.

North Miami, Florida, Junior High School—Wilfred E. Rice, Principal. Open-circuit telecasts are received from the educational station owned and operated by the Dade County School Board. Seventh-grade science and eigth-grade history classes met in the auditorium where six television sets are mounted so that all who participate may observe effectively. The master teacher is in charge of the class, assisted by the master teacher of the other television class and a teacher's aide. The aide concentrates on roll taking, seating arrangements, materials distribution and collection, routine reporting, and the like. Working closely with this experiment are two librarians, curriculum assistant, and audio-visual personnel. The purpose of the experiment is to ascertain the effectiveness of television as a resource in the teaching of classes of 300 students. It is the belief that television is a dynamic resource that can be used effectively.

Bristol, Connecticut, High School—George R. Perry, Principal. A class of twenty students in Far Eastern history met three days per week for recitation and viewed telecasts the other two days per week. The telecasts on Asia were sponsored by the State Department of Education. The course proved to be very interesting and exceedingly popular with the students. Judging from the test results, this type of instruction was very effective, even though this subject is difficult because the students have limited background in the history of Asian countries. Kinescopes were made and are available for use with other classes.

Jefferson County Public Schools, Louisville, Kentucky—O. M. Lassiter, Director of Supervision. Present experimentation in teaching by television in three elementary schools will probably be extended to secondary schools in January 1958.

Stamford, Connecticut, Public Schools—R. A. Neuwien, Superintendent. A study is being contemplated in cooperation with adjoining communities to improve the quality of instruction through cooperative action in the use of closed-circuit television in public school systems which have a geographic, economic, and social relationship. The possibilities of effecting economies, while at the same time improving the quality of instruction, are being considered.

Port Chester, New York, Senior High School—Robert R. Zimmerman, Principal. The general purpose of the study is to determine the value of the use of multi-room, closed-circuit television equipment in the daily teaching program of a comprehensive high school. Closed-circuit television, used during the first year, especially in ninth-grade general science, makes for more precise and detailed preparation of material on the part of the teacher. Television is of great value when a demonstration of fine intricate work is in the lesson. Students are interested in television as such and are attracted to a lesson presented on the screen. Students seem to

take greater pride in their work. The program is being considerably extended in 1957-1958. One teacher has been appointed director of television.

Wichita, Kansas, Public Schools—Paul W. Harnly, Assistant Superintendent. The schools have been given an hour's time over the local television station. Experimentation is going forward with some lesson units in seventh- or eighth-grade science and possibly in American history or government on the high-school level. There is also interest in further use of tape recordings.

Grouping of Students for More Effective Instruction and Improved Staff Utilization

A number of schools are seeking to discover possibilities for improved staff utilization when students of high ability and low ability are grouped and changes made in instructional procedures and content.

Plant Junior High School, West Hartford, Connecticut—A. Reed Walker, Principal. The purpose is to secure knowledge from study and experience concerning what can be done for gifted pupils. Study and research by the faculty, use of outside speakers, study and identification of pupils, homogeneous grouping, and adaptation of work to groups have been undertaken. The evaluation report indicates acceptance of the program by the school community and opproval by the professional staff. Faculty members have gained more knowledge about pupils and feel their efforts are more effective. Talented pupils as well as the intellectually gifted are included in the program.

Saydel Consolidated Schools, Des Moines, Iowa—Horace S. Oliver, Superintendent. Students in the seventh grade were grouped into sections based on their ability to read. The study was headed by a school psychologist. Frequent meetings of the staff were held to discuss progress of pupils, materials, techniques, and other matters of interest. Teachers kept a log regarding attitudes, interests, and industry of students. Much has been learned regarding techniques and materials used.

Bristol, Connecticut, High School—George Perry, Principal. Enriched and accelerated courses are being developed to give good-to-excellent students better opportunities to work up to capacity. Procedures involve the use of long-term assignments, more emphasis on pupil planning, and more use of teachers as consultants. Efforts are made to avoid wasting time in activities which students already know. Courses are popular with pupils and returning college students also praise the work.

Lake Washington Senior High School, Kirkland, Washington—Dan W. Shovlin, Principal. A program of advanced academic stimulation is being tested to see if greater achievement results. The hypotheses is also being tested that social, emotional, and physical values are not subvented in the process of selection and part-time segregation in this experimental honors

program. Achievement test scores, achievement on general examinations of the College Entrance Examination Board, follow-up studies in college, and comparisons of social adjustment and maturity of high ability students in selected and unselected groups are being used in the evaluation of the results of the program.

Staples High School, Westport, Connecticut—Stanley Lorenzen, Principal. Competent staff members will be utilized in higher levels of academic work. Plans are being made to offer work in college level history, English, French, and Spanish.

New Britain, Connecticut, High School—Vincent Sala, Principal. The purpose of the experiment is to set up a class for those students who are below average. With the cooperation of a reading consultant, chairman of the Engish department, principal, classroom teachers, librarian, chairman of audio-visual department, and the testing bureau, a special program has been developed to serve below-average students.

Amity Regional High School, Woodbridge, Connecticut—Howard D. Brooks, Principal. A report describes a carefully developed program now in its fourth year designed to meet better the needs of students with widely differing levels of ability, achievement, and maturity, as well as varying interests and objectives. The program was planned carefully by faculty, administrators, lay committee members, and members of the Board of Education. In each year of the study, careful evaluations were made and revisions made in criteria governing group selections, courses of study, definition of promotional policies, instructional materials, and techniques. Remedial programs and fast-learner programs were formulated. At the present time, there seems to be general satisfaction and acceptance. The school is increasingly of the opinion that a fast-learner program or any program directed toward utilizing individual differences should be a continuum during the student's years in school and should not be made up of discrete and unrelated parts.

Bassich, Central, and Warren Harding High Schools, and Maplewood Junior High School, Brideport, Connecticut—Frank Piazza, Assistant Superintendent. An experiment to broaden and deepen the four-year mathematical background of selected pupils in the college preparatory program, as well as to give retarded pupils some elementary special classes and opportunity to have some of the experiences available from participation in a segment of the senior high-school program, is being conducted. All curricula and all grades of the secondary schools are being studied, reviewed, and evaluated. Pupils are being grouped and regrouped according to levels at which they can work successfully. Able students in mathematics will in four years complete not only the usual high-school course, but also a half year of analytic geometry and an introduction to calculus. The complete report indicates a number of interesting efforts aimed at conducting programs for students of different ability.

VanDevender Junior High School, Parkersburg, West Virginia—Edwin B. Warner, Principal. The upper one third of the student body was grouped in ability groups for basic-skills subjects; these students are grouped with other students heterogeneously for all other subjects and home rooms. The number of home-room class sections has been reduced in order to free teachers to direct intramural programs, hostess the cafeteria, and so forth. As a result of the program, the ability spread of each class section has become greatly reduced. The heterogeneous groups make a better situation for such subjects as music and competition in extra-curricular activities. Preliminary findings based upon follow-up studies of students in senior high school indicate improvement in achievement.

Natick, Massachusetts, High School—Alfred A. Maffeo, Principal. In an effort to reduce failures in elementary algebra, a remedial arithmetic course called Fundamentals of Mathematics was introduced as a part of the college preparatory track in mathematics. Students who carry this course improve their mastery of fundamentals by as much as two and more grade-levels within a half-year period. Integration of formal science instruction in the high school is being undertaken with applied science in the U. S. Army Quartermaster Research and Engineering Command in Natick. It is anticipated that selected students may work with Quartermaster personnel on research projects of interest to students as well as the Quartermaster.

Jackson, Mississippi, Public Schools—K. P. Walker, Superintendent, and R. B. Layton, Director of Curriculum. The report entitled, "A Gifted Child in the Regular Classroom" summarizes a number of suggestions for challenging the gifted child in elementary and junior and senior high schools. Suggestions are made for content and procedures in various subject areas.

Teaching Assistants

Flint, Michigan, Public Schools—Spencer Myers, Superintendent, and Mrs. Harriet Latimer, Consultant, In-service Education. In two junior high schools, a portion of the student body is organized on a "house" plan in which a team of teachers is responsible for teaching academic subjects and the personal-social-emotional adjustment of the students involved. A teacher-aide is assigned to each team of teachers to assume responsibility for a variety of clerical activities. The purpose aims to capitalize on teacher competences, to provide improved guidance services, and to relieve teachers of clerical duties. Another experiment involves teacher-trainees in an earning-learning experience during their five-year training period. Contributions to staff utilization include providing for better training of teacher-trainees and contributions which teacher-trainees make to the regular staff. Also, in three Flint high schools, seniors may elect cadet teaching for a regular five-hour credit toward graduation. Class members are assigned to work with elementary or junior high-school teachers three days each week and two days in observation. Cadets per-

form many services as teaching assistants. College students are serving as audiometer technicians in the schools. Flint also has a carefully developed program of class scheduling by ability, achievement, and interest with special adaptations in instructional procedures and content.

Wayland, Massachusetts, Junior-Senior High School—William M. Griffin, Principal. The purpose of this program is to give broad, yet specific, work experience to teacher-education students at Northwestern University and, at the same time, reduce the amount of teacher time consumed in non-teaching activities and reduce the teacher load in certain areas. Internes work in the school on a ten-week basis doing clerical duties, serving as resource persons, supervising small study groups, assisting in special testing, and substituting for regular teachers for short periods of time. All persons involved feel that this a worth-while venture.

Norwich, Connecticut, Free Academy—George E. Shattuck, Principal. Non-certificated persons are used to supervise study hall—two such persons have relieved ten teachers of this activity. Classes in the school meet three, four, five, or six times per week, depending on subject and need. A highly differentiated curriculum provides adaptations for students of different abilities; ability grouping is followed in academic areas with heterogeneous groupings in non-academic areas. The school participated along with others in Connecticut in the experiment in using television as an aid in Far East history. A considerable number of curriculum projects are under way.

University, Mississippi, High School—H. Bruce Brubaker, Director. Advanced high-school science students are used as laboratory assistants in tenth-grade biology in order to lighten the teacher's load and provide worth-while experiences for students. Consideration is being given to expanding this program to include junior high-school science and mathematics classes and perhaps others.

San Lorenzo, California, High School—Nels B. Nelson, Principal. The study is designed to provide practical experiences as a part of the guidance program for students interested in teaching careers. High-school students served as teaching assistants in an 8-week summer session on the elementary-school level. Elementary-school pupils were so pleased with the situation that they competed for the opportunity to be in a group with high-school students as assistants. Although summer session teachers spent extra hours with the high-school students, they also found they had real assistance in their classrooms. High-school students felt they had gained a rewarding summer experience and a number of them decided definitely to enter teacher education programs.

Northwest Classen High School, Oklahoma City, Oklahoma—J. Frank Malone, Principal, and W. H. Taylor, Director of Secondary Education. One of several studies involved a team approach to teaching. A class of eighty students is taught by two teachers and a secretary. Some television instruction will be utilized. The program has many purposes to be tested,

including discovering relationships between class size and teaching effectiveness, making more efficient use of teacher time and abilities, finding teaching duties that may be delegated to clerical personnel, accelerating the orientation of new teachers, seeing whether greater challenges come from teaching larger groups, observing effects upon individual attention to students, and paying better attention to individual differences among teachers and students. Preliminary results seem quite encouraging.

Assignment of Staff and Scheduling

Manatee County High School, Bradenton, Florida—Paul F. Davis, Principal. Twenty-one to twenty-four Wednesdays are set aside as "study days." On study days, teachers do not hold regular classes, nor do they give new tests. They supervise pupils as they study individually, give make-up tests, and help those who have been absent. Teachers may request special group meetings, field trips, and the like. Schedules of students and teachers on study days are made three days in advance through careful procedures. Also in this school there are a number of "quarter classes" which meet for nine weeks which is the length of the marking period.

Selah, Washington, Junior High School—Don Gordon, Principal. A new building is being constructed which has classrooms flexible enough to permit deployment of students in different sized groups. A schedule is being prepared so that a student will probably have not more than three different teachers during the day. An interesting planning guide has been developed.

White Bear Junior-Senior High School, White Bear Lake, Minnesota—O. U. Johansen, Principal. Three sections of world history are combined three times a week into a large lecture section. On the other two days each week, the instructor meets students in smaller groups. Ninety students are thus taught in nine class periods instead of the customary fifteen. Standardized tests will be given at the end of the school year and comparisons made with control groups. Student attitudes toward the experimental group will also be measured.

Hamilton Terrace Junior High School, Shreveport, Louisiana—A. C. Doyle, Principal. A three-hour block schedule is used in grades seven, eight, and nine. A rotating schedule operates on a twelve-week basis, thus permitting an enlarged program of studies and the elimination of study halls. Apparently such a program provides better staff utilization than a departmentalized, semester-schedule plan.

Mark Morris Junior-Senior High School, Longview, Washington—Henry E. Rybus, Principal. A three-hour block of time is used for grades 7-10 which includes language arts, social studies, science, and math. In planning for a new building, the school developed a very interesting and provocative set of specifications including large blocks of time, variety of

space areas, wiring for electronic equipment, economies of open corridors, and other matters.

DeRidder, Louisiana, High School—J. R. Gormley, Principal. The school prepared a very interesting presentation to the community describing the advantages of moving from a six- to a five-period day. Special schedules for regular students, accelerated and repeat students, and band students are indicated. The purpose of the proposed experiment is to improve schedules for both students and teachers.

Manchester, Connecticut, High School—Edson M. Bailey, Principal. The aim of the study is to see if the time and energy of the teacher and a room period could be conserved by having a teacher meet two classes together on the same period for one of the four class periods a week. This is being done in English, U. S. history, Algebra II, chemistry, and physics. During the large group session, lecture work, audio-visual materials, and other presentations are made. Final evaluation has not been made although it appears that standards are being maintained in the program.

Curricular Revision, Evaluation, and In-service Growth

Lincoln Junior High School, Charleston, West Virginia—R. V. Braham, Principal. A study was designed to determine the value of an extended reading period in general science. Students were taken from general science classes two days a week and placed under the supervision of their English teacher for extended reading supervision. The material was of general science nature. The second semester they were taken three periods a week from general science classes for the same purpose. General science achievement test scores are being used in an effort to evaluate the results of the program.

North Haven, Connecticut, High School—Thomas A. Aquila, Principal. Revisions in the management and philosophy of the cocurricular program in order to make it a more vital force in the total school offering and introduce more student responsibility in the management of it have been developing over a three-year period. An interesting statement of "organiational procedure" describes numerous adaptations designed to accomplish the goals.

Decorah, Iowa, High School—John Cline, Principal. A study is under way to revise the curriculum of the high school in order to fit better the needs of the community. Consultants are working with study groups to provide an improved course of study. The assumption is that, when teachers feel more a part of the total situation, they can do a better job of teaching.

Stratford, Connecticut, High School—Donald W. Fowler, Principal. Teacher, pupil, and community leaders have met to formulate plans for projects in economics, problems of democracy, and art. Reports indicate greater use of community resources as aids in vitalizing education. School-

community relationships are improved, better teacher-pupil planning results, students are given greater self-assurance by planning and working with adult groups, and many other valuable outcomes in improved knowledge of community agencies, problem-solving, and the like, apparently are resulting.

Andrew Warde and Roger Ludlowe High Schools, Fairfield, Connecticut—Daniel B. Fitts and Roger L. Warner, Principals and Harold S. Shea, Director of Secondary Education. A "house plan" is used to give the distinct advantage of the intimacy of a smaller school in this large school; each house is a cross-section of the school. Decentralization of administration results in more persoal contacts with students, parents, and teachers. The selection of mature women, mothers who are experienced in dealing with adolescents, as house aides makes for efficiency. The staff of the house also includes principal, director of guidance, head teacher, and assistants to the head teacher. An interesting statement of responsibilities and duties of various staff members under the house plan organization is available.

Bloomfield, Iowa, Independent High School—R. S. Laughrige, Principal, and F. N. Reppe, Superintendent. Procedures have been outlined to bring about better working relationships by having more people involved in study groups. Faculty, students, and community are working together on a number of problems including cadet teachers, released time, parent education, conferences, salary policies, and many others.

Wilbur L. Cross High School, New Haven, Connecticut—Nathan J. Denny, Principal. Working cooperatively with the James Hillhouse High School, also in New Haven, the schools have produced a program of educational and community requirements for these two new senior high schools. An interesting digest of the results is available.

Prescott, Arizona, Public Schools—A. W. Judd, Superintendent. A city-wide in-service training program with the cooperation of the University of Arizona, Arizona State College at Tempe, and Arizona State College at Flagstaff was organized in an effort to introduce a joint course in language arts which is open to all faculty members of the Prescott Schools. A coordinating committee, elected by the staff, guided the course. The school board set aside an hour of school time once a month for committee meetings.

Dubuque, Iowa, Community Schools—George W. Lee, Principal, A survey of the curriculum by the entire staff resulted in the development of a statement of philosophy, closer working relationships with the community, and revisions in the curriculum.

Las Vegas, Neveda, High School—Walter E. Long, Principal. Special efforts are being taken to make adjustments from year to year on staff assignments to utilize better the training and abilities of staff personnel. Attention is given to both classroom and extracurricular activity assignments.

Other Approaches

Salina, Kansas, Junior High School—Walter W. Waring, Director of Secondary Education. A new junior high-school building is being planned with the following considerations: determine what areas of group guidance can be presented more effectively for groups of 60-120 pupils; effectiveness of instruction to large groups through visual-aids; efficiency of administering standard examinations with large groups; possible use of television and other aids. While no results are available for reporting at this time, mechanics of scheduling have been solved.

San Angelo, Texas, Public Schools—G. B. Wadzeck, Superintendent. Several studies have been conducted with respect to staff utilization in the elementary grades. Steps are now under way to consider a number of such studies in the secondary schools, including the following: using secretaries and aides; planning for a longer school year to make better utilization of new high-school facilities that are lighted and air-conditioned for equal efficiency twenty-four hours per day, twelve months per year; developing a flexible schedule of classes; using teachers as consultants to other teachers at the same grade level and also using secondary teachers as consultants to elementary teachers, especially in the fields of science and mathematics; and providing three distinct levels of instruction with flexibility in selection of courses for students as shown by proven ability. There is much interest among the staff and in the community in studies related to improved staff utilization.

Mention should also be made of several staff utilization studies known by the author to be under the current support of the Fund for the Advancement of Education, 477 Madison Avenue, New York 22, New York. Information about these studies may be obtained by writing Dr. Lester W. Nelson, Executive Associate of the Fund.

Three of the studies are concerned with improving staff utilization in small high schools. *The Upper Catskill Area Project in Small School Design* is a part of the Fund's national television study effort. A number of adaptations including the use of television are being considered. The *Nebraska Small High School Project* involves the combined use of open-circuit telecasts and correspondence courses in providing improved learning experiences for students. The *Rocky Mountain Area Project for Improvement of Small High Schools* represents a cooperative effort involving the Colorado State Department and a number of schools in efforts to see how multiple-class teaching, group techniques, and a number of other approaches may be used to produce better results in small schools.

Washington County Schools, Hagerstown, Maryland—William Brish, Superintendent. An extensive experiment principally involving closed-circuit television has been set up in the elementary and secondary schools of the county. Workshops have been held to enable teachers to prepare material and learn more about the use of television. Large numbers of

students and teachers are daily using television. By 1958, approximately 18,000 pupils in the entire system of twenty-five schools will be involved. Several reports of progress are available.

National Program in the Use of Television in the Public Schools. This project being started this year will try to discover in a number of cities, counties, and states how television may be used most productively to improve learning outcomes for students and result in better staff utilization. Taking part in the program as the outset are the following: cities—Atlanta, Cincinnati, Detroit, Milwaukee, Norfolk, Oklahoma City, Philadelphia, and Wichita; counties—Dade County (Miami), Florida, and Jefferson County (Louisville), Kentucky; and states—Nebraska, North Carolina, and Oklahoma.

Apology for Omissions and Plea for Assistance

The author is certain that many worth-while studies of improved staff utilization are not included in this presentation because they were not brought to attention as a result of the procedures outlined at the beginning of the chapter. Apologies are presented for these omissions even though much time and effort was extended in order to obtain information.

The Commission is anxious to know about other studies and to assist in disseminatiing information about them. Readers are invited to tear out the blank at the bottom of this page (or construct a similiar one), give information requested, and mail the form or a letter to the address indicated. The schools mentioned will then be contacted so that publicity regarding the studies may be included in a later issue of THE BULLETIN. The cooperation and interest of readers is sincerely appreciated.

(Tear off here and mail)

NASSP Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools
200 Gregory Hall Urbana, Illinois

Report of Studies and Demonstrations Related To Improved Staff Utilization in Secondary Schools

*Name of school*_____ *Grades included*_____

Address _____

*Name of principal*_____

*Name and address of person answering this inquiry form if different from principal*_____

*Describe in a sentence the general nature of the study or demonstration*_____

_____

_____

CHAPTER XXI

More Staff Utilization Experimentation Is Needed

J. Lloyd Trump

FOREGOING chapters of THE BULLETIN have implied and indicated need for additional experimental studies to broaden further the horizons for improved staff utilization in junior and senior high schools. Such experimental studies, using carefully devised evaluation techniques, are needed to find answers to many questions raised elsewhere in THE BULLETIN. Even though similar studies may have been conducted elsewhere and the resultant data point very clearly to desirable changes, the effects upon local practices are likely to be more pronounced if studies are made in the local setting.

The following outline suggests more than one hundred studies, listed under nine major headings, which might be made. Of course, the most productive study would seem to be Number 9, which suggests an across-the-board approach to the improvement of staff utilization.

Professionally minded persons are urged to examine carefully the outline. Doubtless many other relevant studies will suggest themselves. The outline of experimental studies follows:

1. *Utilization of teaching assistants working under the supervision of, or in cooperation with, professionally certificated, experienced, competent teachers*
   - 1.1 Non-certificated adults
     - 1.11 Provide clerical help
     - 1.12 Provide custodial help
     - 1.13 Serve as laboratory assistants
     - 1.14 Teach certain topics or phases of units or courses
     - 1.15 Assist in preparing and distributing materials
     - 1.16 Assist in reading and correcting materials
     - 1.17 Assist in review and testing
     - 1.18 Supervise playgrounds, study halls, *etc.*
     - 1.19 Assume specific duties in connection with extraclass activities
   - 1.2 College and university students
     - 1.21 Same as under 1.1

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1.3 High-school students
  1.31 Same as under 1.1
1.4 Certificated, professionally trained teachers
  1.41 Work with students with behavioral problems
  1.42 Work with students needing remedial instruction
  1.43 Work with specially gifted students
  1.44 Teach certain topics or phases of units or courses
  1.45 Assist in preparation of materials
  1.46 Assist in evaluation

2. *Reorganization of administrative patterns*

2.1 School year
  2.11 Operate on four 12-week quarters basis
  2.12 Operate two 18-week semesters with fully organized and synchronized 9-week summer session
  2.13 Organize to permit concentrated work in some fields
2.2 School day
  2.21 Eliminate organized and/or staff-supervised study halls
  2.22 Schedule some classes 5, others 4, 3, 2, or 1 day per week on the basis of purpose and need
  2.23 Change length of class periods
  2.24 Change number of periods in day that students are scheduled for classes and activities
2.3 Pupil programs
  2.31 Plan in relation to different levels of maturity, interests, and achievement
  2.32 *See* 2.2 and 3
2.4 Class size
  2.41 Change in relation to purposes and methods of instruction
  2.42 Select methods of instruction and materials best suited for groups of 5, 10, 20, 30, 100, 300, *etc.*
  2.43 Provide flexibility in schedule arrangements to facilitate different sized classes at appropriate times
2.5 Credit arrangements
  2.51 Calculate credit on achievement of purposes rather than on time spent, as in present Carnegie Unit
  2.52 Make flexible to provide for needs as expressed under 2.2 and 2.3
2.6 Teacher programs and assignments
  2.61 Plan work loads in relation to assistance (personnel and material) provided
  2.62 Plan work loads in relation to complexity and types of tasks assigned
  2.63 Recognize better time relationships in planning, preparing materials, teaching groups of different sizes, evaluating, *etc.*
2.7 Supervisory relationships
  2.71 Use carefully selected, competent career teachers who would devote part-time to working with less-experienced colleagues in planning, preparing materials, evaluating, managing classes and other phases of instruction
    2.711 Work with 6-10 teachers in various departments, perhaps at a grade level

2.712 Assume responsibility also for some teaching, perhaps an average of two hours per day, with large groups or for special purposes

2.72 Develop policies so that supervising teacher would work under supervision of principals and supervisors of instruction

2.73 Develop for supervising teachers special pre-service and in-service training in special programs developed by graduate schools of education

2.8 Salary policies

2.81 Base compensation upon responsibilities as well as training and experience

2.82 Provide stimulation toward making teaching a career profession

2.83 Establish policies for rewarding meritorious services

2.9 Certification and other legal standards

2.91 Relate to job to be done as well as training

2.92 Permit payment to various types of teacher assistants

3. *Recognition of student responsibilities for learning*

3.1 Evolve freedom from institutional mothering

3.2 Establish policies showing relation of staff to independent student work

3.21 Indicate respective roles of teacher and student when classes of different sizes meet a variety of number of minutes per week

3.22 Indicate relative roles of teacher and student when different methods of instruction are followed

3.3 Extend participation in the management of school affairs

3.4 Increase responsibilities for control in study halls, laboratories, libraries, *etc.*

3.5 *See* 2.31

4. *Analysis of teacher roles and teacher competencies*

4.1 Define changing roles of teacher in relation to students in such teaching functions as motivating; explaining; pointing to materials; demonstrating; planning methods of learning; organizing groups; listening; viewing; using mechanical and electronic aids; developing attitudes, appreciations, skills, and understandings; helping individuals and groups achieve social and psychological adjustment; reading papers; evaluating, recording, and reporting pupil progress; working with parents and other lay persons; working with professional colleagues; and disseminating and adding to educational science

4.2 Determine individual differences among teachers in interest and ability to perform responsibilities listed under 4.1

4.3 Evaluate teacher effectiveness in various roles under 4.1

4.31 Select kinds of evidence, methods of collecting and interpreting data

4.32 Develop organization and techniques for implementing findings

4.4 Effects of rewarding superior teachers

4.41 Financial and professional gains

4.42 Relations with professional colleagues

4.43 Relations with students

4.44 Relations with parents and other lay citizens

4.45 Effects upon young people considering teaching as a possible career

4.5 Effects of electronic and mechanical aids in changing the role of the teacher
4.6 Effects upon social, emotional, and physical adjustment of teachers when roles are changed

5. *Utilization of material aids to instruction*
   5.1 Television: open and closed circuit
   5.2 Films and slides
   5.3 Radio
   5.4 Recordings
   5.5 Pictures, charts, mock-ups, and other visual aids
   5.6 Other electronic and mechanical aids to learning and appraisal
   5.7 Laboratories, workshops, and libraries
   5.8 Community resources

6. *Utilization of physical plant in improving staff functioning*
   6.1 Determine various sizes of instructional areas needed
   6.2 Analyze location relationships of instruction areas
   6.3 Consider influences of construction materials used in physical plant
   6.4 Study physical plant influences upon departmentalization, student habit and attitude development, energy output of teachers, *etc.*
   6.5 Develop plans for assuring maximum flexibility for future needs

7. *Improved staff utilization through basic curriculum revision*
   7.1 Analyze unit method, assign-study-recite, and other methods of instruction
      7.11 Use teacher-pupil planning to develop individual responsibility on part of students
      7.12 Develop consultant role of teacher
      7.13 Select best techniques for given purposes
      7.14 Plan effective techniques for large classes
         7.15 Use buzz sessions and other involvement techniques to serve individual needs in large classes
      7.16 Develop individual and group self-appraisal techniques
   7.2 Change amounts and types of laboratory and comparable work
   7.3 Consider effects of patterns of required and elective topics, units, and courses
   7.4 Plan different sequences of course offerings
   7.5 Use correspondence courses and independent study
   7.6 Develop increased departmental co-operation to minimize duplication
   7.7 Develop institutional co-operation to provide specialized courses and/or economy of instruction
   7.8 Study relationships between content, methods, and class size

8. *Utilization of effective techniques for interesting increased numbers of able young people in becoming teachers*
   8.1 Utilize the proposed professional role of the teacher
      8.11 Study influence of the professional, career-minded, successful teacher whose competences are being effectively utilized
      8.12 Analyze role of teacher-assistant experience as a factor—*see* 1.1, 1.2, and 1.3
      8.13 Note attitudes created by using latest electronic and mechanical aids

8.2 Face the total manpower problem
  8.21 Provide information to students, parents and other lay citizens, and teachers
  8.22 Develop program for helping students and their parents make intelligent and reasonable choices
8.3 Develop an index of occupational attractiveness designed to identify the relative importance of various factors which will influence people to enter teaching in increasing numbers
8.4 Develop techniques to help local schools obtain facts concerning the number of pupils in the top one fourth of their classes who do not graduate from high school and/or attend college
  8.41 Diagnose why the situation exists
  8.42 Take whatever steps appear to be necessary to correct the situation so this source of manpower is not overlooked
8.5 Study methods in local schools to locate prospective teachers, trained and untrained, in the numbers needed (*see* 8.12)
8.6 Collect, refine, collate, interpret, and publish data regarding the manpower needs in teaching
  8.61 Project in terms of population expectations
  8.62 Consider extent to which the use of certain minority groups would relieve parts of the manpower situation
8.7 Help reduce the number of persons who leave or fail to enter the teaching profession by providing better initial employment practices, higher salary incentives, better orientation, more adequate and up-to-date supplies and equipment, and improved relationships with students, professional colleagues, and parents and other lay citizens
8.8 Take further steps to professionalize teaching, including working toward accepting the principle of increasing the salary when responsibilities are increased
8.9 Take steps to improve predictions of persistence in the profession

9. *Analysis of contributions and relationships of various methods of staff utilization in a coordinated program*
  9.1 Use as many of the techniques listed under 1 to 8 inclusive in a given local situation and determine effects upon quality of instruction, teacher-pupil ratios, costs, *etc.*
  9.2 Develop criteria for deciding which techniques are to be used
  9.3 Make priority decisions regarding which techniques are to be introduced first

Should we undertake some studies?

Which of the studies bear on problems that professional and lay persons in our community believe are most pressing?

How can we develop the point of view that experimentation to solve problems is different from merely trying to prove or disprove the worth of existing practices?

What steps can we take to facilitate experimentation?

Readers of THE BULLETIN are cordially invited to correspond regarding experimental studies with the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, 200 Gregory Hall, Urbana, Illinois.

The Book Column

Professional Books

ADLER, IRVING. *What We Want of Our Schools.* New York 36: John Day Company. 1957. 256 pp. $3.75. Everyone knows we need more and better schools. Why? Why do we have schools, anyway, and what is wrong with the ones we have? It seems unnecessary, almost impertinent to ask such questions, yet the answers we make are usually glib and superficial. Now, in a book for parents and teachers and all who care about children, the author takes a long look at our schools and shows us why and how human beings are educable—educational psychology, in plain language; what kinds of schools Americans expect—the foundations, past and present, of education in a democracy; where our schools have fallen short of that goal; and how it can be reached.

One obstacle, he makes clear, is that we do not agree on the kind of schools we do want. Some think that American children should have a broad, liberal, stimulating education; others, a limited and largely vocational training. Then there are those who argue that *certain* children should have a liberal education because they are innately capable of absorbing it, but that other children, of more limited intelligence, deserve only limited training.

BARRY, RUTH, and BEVERLY WOLF. *Modern Issues in Guidance-Personnel Work.* New York 27: Bureau of Publications, Teachers College, Columbia University. 1957. 250 pp. $3.75. This book presents an analysis of the status and future possibilities of this area. Dealing with that work on all educational levels, the book explores current problems and issues in such areas as central concepts, organization, training, national associations, roles, procedures, research, relationships, and leadership. Parallelisms between guidance-personnel issues and similar problems in education make the book valuable reading for all interested in the many facets of education.

In focusing upon issues, the authors deal frankly and objectively with their topics. Their analysis may stir disagreements and provoke controversy and thereby help to shape new directions for guidance-personnel work. Not all readers will agree with the authors, but no one will find the book dull reading, for herein guidance-personnel workers examine their own field and engage in the constructive self-criticism needed today in education.

BRYAN, C. V. *The Child That Nobody Wanted.* Caldwell, Idaho: The Caxton Printers, Ltd. 1957. 284 pp. $4. Here is the story of an only child of a legal advocate and his young wife, a teacher of languages. Through two tragedies, one in his infancy, the child loses both his parents, and for a short time he is compelled to live with despicable people, from whom he makes his escape at the age of twelve to become a printer's devil. Next follows an electrifying, almost incredible account of child self-development by means of trial end error. Pathos, such as Dickens portrayed, is interwoven with frothing bubbling fun, like Mark Twain's, as the author recounts the pranks of a teenage boy who was unhampered by the restraints of normal discipline. Growing up "the hard way," trying to make a living entirely "on his own," he yearned in his lonely hours for adult guidance, not knowing anyone he could trust. Eventually he met an understanding, mature woman who was destined to play a prominent part in his future life.

DE HAAN, R. F., and R. J. HAVIGHURST. *Educating Gifted Children.* Chicago 37: University of Chicago Press. 1957. 286 pp. $5. Gifted children—an important but often under-educated group of children—are the focus of this new study. Two leading authorities in the field of education discuss the philosophical and theoretical purposes and aims of education for the gifted and spell out in detail how the general principles can be applied in the community, school, and classroom.

In order to establish a firm groundwork for the practical aspects of their subject, the authors deal first with the broad social implications involved. Prime among their considerations are the attitudes of the American public toward the specialized education of gifted children—an ambiguous attitude which favors it and frowns upon it—and the place of this form of education in the context of American education as a whole.

Practical programs are given for both primary and secondary schools for identifying gifted children through tests and observations, for developing the gifted enrichment of curriculum within the classroom, through special grouping for broader or more advanced work, and through acceleration. Many programs are outlined, and reports of actual programs are given to exemplify procedures and results. Enrichment programs outside the classroom are discussed; community resources are suggested; case histories are drawn from programs in action.

These practical aspects of the issue are discussed in relation to the obligations of all who are responsible for the education of the gifted child: the parents, community workers, administrators, and teachers.

The final section of the book deals with those problems in the education of gifted youth which have not as yet received the attention they deserve. Chief among these are problems of motivation, personality development of the gifted, and the development of creativity.

Department of Classroom Teachers and Research Division. *The Teachers Salary Committee and Its Work.* Washington 6, D. C.: National Education Association. 1957. 96 pp. $1. This bulletin is based on current reports from local salary committees and from state associations publications and other sources. It discusses leadership, what a salary schedule is, committee work, sources of money, recommendations, *etc.*

FINE, BENJAMIN, and VIVIENNE ANDERSON. *The School Administrator and His Publications.* New London, Connecticut: Arthur C. Croft Publications. 1957. 128 pp. The authors show how good publications produce good public relation. They then discuss and offer valuable suggestions about the annual report, the house organ, "occasional" publications, the handbook, promotional and campaign publications, the financial report, printing, letters, student publications, why publish, benefits, what to publish, major problem in preparing publications, and the philosophy of the school administrator. Included also is a short list of selected books for reading.

FRENCH, WILL, and Associates. *Behavioral Goals of General Education in High School.* New York 22: Russell Sage Foundation, 505 Park Avenue. 1957. 247 pp. $4. This book presents for the first time an organized consensus of the expectations that citizens and educators hold for the American high school. The study was made under the joint sponsorship of Russell Sage Foundation, The National Association of Secondary-School Principals, and Educational Testing Service, with planning assistance from the United States Office of Education, the American Association of School Administrators, and

the Association for Supervision and Curriculum Development. Seventy-five leading educators participated as consultants, advisers, and reviewers. The recommendations of the consultants were edited, and the text prepared, by the author, one of the country's distinguished leaders in secondary education.

The proposed lists of behavioral outcomes—organized under the maturity goals and four areas of behavioral competence—are intended to help high schools develop their most effective general education programs. They are based on the assumption that: (1) the purpose of general education should be to help the student realize his own fullest potentialities and meet civic responsibilities; (2) for clearest definition, outcomes of general education should be described in terms of performance or behavioral competence rather than in terms of knowledge; (3) students should be expected to know how to use what they know and to have the disposition to do so; and (4) the scope of general education should be sufficiently broad to provide youth with the kinds of competence needed to meet life's demands as a person and as a citizen. Classroom teachers, members of curriculum committees, curriculum coordinators, principals, superintendents, members of state departments of education, college teachers, and members of lay committees will find this study of great practical use in evaluating their own present curriculum and considering its revision.

GORDON, C. W. *The Social System of the High School.* Gencoe, Illinois: The Free Press. 1957. 198 pp. $4. This book studies selected social structures found to be significantly related to the behavior of adolescents. Specifically, it explores the theory that the dominant motivation of the high-school student is to achieve and maintain a general social status within the organization of the school. He accepts roles in the various groups which enhance his position in the informal network of personal relationships within the school.

The behavior of each student is best understood and predicted, given his position within this network. His behavior in any specific situation such as the classroom, is ordered by his general standing in the school-wide social system. The principal task of this book is to delineate the framework of action with its patterns of interaction, values, norms, and activities which make up the social world of the school.

The author describes the three sub-systems that the students are involved in at high schools: the formal scheme of things which includes administration, faculty, curriculum, textbooks, classrooms, grades, rules and regulations; a semi-formal set of sponsored organizations and activities, such as athletics, dramatics and departmental clubs; the informal, half-world of usually unrecognized and nonapproved, cliques, factions, and fraternities.

The Postwar Struggle To Provide Competent Teachers. Washington 6, D. C.: National Education Association, 1201 - 16th Street, N. W. 1957 (October). 32 pp. 80¢, with the following discounts: 2 to 9 copies, 10%; 10 or more copies, 20%. This is not a report of an original study, as has been the case in previous issues of the *Research Bulletin;* it is a review of the studies by the National Education Association of the postwar teacher supply and demand problem. Unless otherwise indicated, the data presented are derived from earlier NEA reports. This report is presented in two parts. The first part provides a review of postwar elementary-and secondary-school conditions; the second part looks at the problem from the college viewpoint.

SCHMIDT, G. P. *The Liberal Arts College.* New Brunswick, New Jersey: Rutgers University Press, 30 College Avenue. 1957. 320 pp. $6. The chronicle of the liberal arts college in America covers the three centuries and more from

the founding of Harvard to the present day. It is a human and lively picture of the American college in all its phases, presenting it as an evolving historical institution and an important element in American culture. The book describes the growth of representative colleges, large and small, from the Atlantic to the Pacific, and recreates the world and life of the campus. Students and professors, presidents, trustees and alumni appear as persons and not categories. The community from which the college grows is always present, as are the church and state which try to control it and give it direction.

SHOEMAKER, DON, editor. *With All Deliberate Speed.* New York 16: Harper and Brothers. 1957. 249 pp. $3.50. This is the story of desegregation as it has proceeded in the South in the turbulent period since the U. S. Supreme Court's decision of 1954. The distinguished writers who tell the story have had a single aim: to measure with facts and objective analysis the degree of compliance or noncompliance with the Court's constitutional decree. All of the contributors have worked either as staff members or in close connection with the Southern Education Reporting Service and its news-gathering arm, *Southern School News*, both directed by the author. They include a well-known school administrator, and an eminent jurist.

Together they explore a 17-state southern and border region to give a picture of the contemporary scene, and to distill and document the legal, political, and social influences affecting the conduct of public education. The experience of individual communities highlights the extent of progress to date. You see a total picture of events and forces that have moved too rapidly to be seen whole heretofore.

This account reveals, in perspective, differences between border areas and the deep South, the problems peculiar to both urban and rural localities, how the colleges and universities have faced the problem, the substance of state legislation bearing on the issue, and what it is like to be a school administrator caught between contending forces.

Teaching Science. Trenton 8: New Jersey State Department of Education, Division of Curriculum and Instruction. 1957. 110 pp. 35¢. The purpose of this guide to the problem approach is to offer assistance to those interested in developing and improving the science curriculum, and to suggest to teachers what is considered to be an effective approach to the teaching of science. Parts I and II deal primarily with the planning of the scope and sequence of a developmental science program. Part III suggests a problem-solving approach to the teaching of science. Part IV contains a number of articles submitted by New Jersey teachers which describe various methods, techniques, and experiences which they have used in the classroom. Part V contains suggestions for the evaluation of the science program from the kindergarten through grade twelve. The first section of Part V suggests criteria for evaluating the science curriculum, while the second section lists techniques for assessing learning within the classroom.

Books for Pupil-Teacher Use

ALESEN, L. A. *Mental Robots.* Caldwell, Idaho: The Caxton Printers, Ltd. 1957. 107 pp. $1.50. Americans today, writes the author, are being deluged with a cleverly planned and skillfully executed barrage designed to achieve adoption of a group of proposals by Federal, state, and local governments classified under the broad general and disarmingly innocent title of "The Mental Health Program." In this book, it is the author's purpose to

analyze this mental health program, to look beneath the surface of the sweeping charges of its proponents, to inquire critically into the basic philosophy motivating these proposals, to present more fundamental and rational explanations for this allegedly sad state of mental health, to direct attention to the subversive hard-core sponsorship of these proposals, to indicate their sinister pattern and their ultimate effect upon the citizen's rights and liberties if adopted, and, finally, to offer a solution to the problem of mental health and mental illness in keeping with the American tradition of individual responsibility and the unapproachable and incomparable institutions of private enterprise which have been erected upon that premise.

Art—Seven, Eight, Nine, and Ten. Brooklyn 1, New York: The Division of Supplies and Syllabi, Board of Education, 110 Livingston Street. 1957. $1.50. This *Art Manual* outlines the program for the secondary schools of New York City. The manual is the result of extensive classroom research in the field of adolescent interests, attitudes, and capabilities. Experimentation with methods and materials was carried on over a period of years. Testing and evaluations were continuous. The program is designed to help young people develop their own creative powers and to help them understand those factors in our culture which add beauty and richness to living. The manual suggests experiences which will serve adolescents in meeting their needs and which will help develop sensitive, preceptive, and worthy citizens.

The introductory sections of the manual include a credo on art, the aims of the program, a general plan, the apportionment of time in table form, suggestions for teaching, community resources, and the pupil's relations to his community. Specific suggestions for art experiences suitable for each grade make up the body of the manual. The experiences are varied, ranging from basic painting to theater design. Each topic is treated in terms of materials, expected learnings, suggested development, and evaluation of experiences. A bibliography of books and periodicals in art background, as well as art education, adds to the usefulness of the manual. Black-and-white and colored photographs enhance the manual, and they should provide a dynamic spur to creative teaching. The colorful activities depicted throughout the manual can serve as incentive for attractive room decoration.

BAMM, PETER. *Early Sites of Christianity.* New York 14: Pantheon Books, Inc. 1957. 256 pp. $4.50. The ground covered in this book coincides with the geographical background of the Old and the New Testaments and Acts. In the footsteps of the first Apostles, the author travels from Athens to Thessalonica, to Ephesus, Syria, Damascus, Babylon, Jerusalem, and Mount Horeb. In Athens he conjures up St. Paul and his discourse from the Areopagus. Thessalonica is for him the first Greek city in which a Christian community was founded; Nicaea, the setting of one of the epic theological quarrels that decided the question of the nature of Christ; Ephesus, the city where the silversmith Demetrius fomented an uprising against Paul, in the interests of his trade.

This is traveling in time as well as in space. At every step, Biblical history comes to life, we see kingdoms rise, flourish, collapse, while the life of the spirit continues intact, and pilgrims now as ever stream to visit the shrines and monasteries that preserve the earliest Christian memories.

BECKHARD, A. J. *Black Hawk.* New York 18: Julian Messner, Inc. 1957. 192 pp. $2.95. Although Black Hawk came from a long line of warriors, he abhorred scalping and killing. However, his courage and fine generalship against marauding tribes was unquestioned and at the death of his father,

Black Hawk became leader of the Sauk and the Fox. As Head Chief and Medicine Man, he wanted only that his people be left unmolested in their beloved village of Saukenuck—the largest Indian settlement in America—and that they be allowed to retain their hunting grounds. He also tried to unite the five Indian nations for their mutual protection, since they were all caught in the white man's struggle for power in the West.

In 1804 when his people were tricked into a fraudulent treaty whereby they gave up their lands for the paltry sum of $1,000 a year, Black Hawk attempted to negotiate for fairer terms. However, his flag of truce was fired upon so that he was left no choice but to embark upon the ill-fated Black Hawk War.

Ultimately this great-hearted leader conquered his enemies with his pen. For Black Hawk left his published autobiography in which he justifies his actions that gave him the reputation as a bloodthirsty savage. But there is also evidence that he was a reluctant warrior who spent his life in vain attempts to protect his people not only from the whites but also from themselves.

BENSON, MILDRED. *Dangerous Deadline.* New York 16: Dodd, Mead and Company. 1957. 221 pp. $2.75. This is the story of a young boy's efforts to become a newspaper reporter. Dick Rowland is determined to become a newspaperman, in spite of the fact that his father, a former newspaper editor, was framed by a crime syndicate he tried to expose and was convicted of bribery then, put on parole—a supposed "favor." As a result, his health broke down. Dick finally succeeds in landing a job as a vacation relief reporter. Through his unflagging zeal in checking even the most minor details, from the names of swimming contest entries to that of a man accused of car theft; plus some lucky breaks that he has the initiative to follow on through, plus a great deal of personal friendliness and courage, Dick manages to win a regular assignment, covering the courthouse. This gives him an opportunity to continue tracking down the same political corruption that his father had bucked—and also to clear his dad's name.

BUTLER, SAMUEL. *The Way of All Flesh.* New York 16: Dodd, Mead and Company. 1957. 413 pp. $3.50. This book is the author's only novel, and even this did not see print during his lifetime, though he had probably completed it many years before he died. Perhaps he never felt quite satisfied with it; perhaps he feared it was too intimately personal in its revelations both of himself and of others who might find themselves caught in unbecoming poses by the lens of his embarrassingly candid camera.

Whatever may have impelled him to withhold it, two generations of readers since its publication have found it a work of mature and incisive intelligence, relentlessly probing for truth, pitilessly laying bare the frailties and meannesses of a race of creatures who suffer less from naked viciousness than from the well-intentioned stupidity with which they add unnecessary woes to those which flesh is inescapably heir to.

CAMPBELL, SAM. *Beloved Rascals.* Indianapolis 7: The Bobbs-Merrill Company, Inc. 1957. 244 pp. $3. Sam and Giny Campbell, driving to their north-woods home after a long lecture tour, run head-on into a fierce forest fire. They help fight it, a terrifying experience. Out of the flames comes a badly singed old crow, his wing feathers so injured he cannot fly. But he can scold and peck! Sam and Giny adopt him, naming him Midnight. He quickly proves to be a beloved rascal—cute, intelligent, friendly, and naughty. He wins the hearts of many who thought there was nothing likeable about a crow.

Arriving at their island home, Sam and Giny are caught up in a whirlwind of exciting and amusing experiences with their wild animal friends. In addition to old friends from earlier books—Loony Coon, Fiddlesticks, and Freckles and many others—a host of new creatures make their debut. Schnickelfritz, the baby snowshoe hare, settles down happily in the cage with the surprised Midnight. With the arrival of two porcupines, Jibber and Jabber, and two enchanting raccoon kittens, Peanuts and Popcorn, the Campbell treasury of animals increases rapidly.

CHENEY, CORA. *The Christmas Tree Hessian.* New York 17: Henry Holt and Company. 1957. 151 pp. $2.75. In the winter of 1776, the Smith family of Newport, R. I., enjoyed a crowded but gay time sheltering six homeless people under their roof. Everyone, from the bumptious twins, Milo and Joseph, to the aged Dame Otis, learned to get along with each other and adapt to the hardships of Revolutionary War times. With a trick, the children were able to discourage the British from billeting soldiers with the Smiths. And an amusing scheme of Dame Otis enabled the family to keep their cow despite British orders. Abel Smith, 12, wanted a more dangerous role in the Patriot cause. Joining with Konrad, a Hessian soldier, Abel helped deserters to cross the Sakonnet River to freedom.

CLARKE, PAULINE. *Hidden Gold.* New York 16: Abelard-Schuman, Inc. 1957. 192 pp. $2.75. Here is an exciting mystery for both boys and girls. It has great writing style, humor, and tense excitement. The mystery is well sustained, completely credible, and quite unusual. Although the book is written as entertainment, it offers much more than that because of the fascinating background information about the Celts. The material about these interesting people is so much a part of the plot that no reader will feel he is being lectured.

It all starts on the train when Alister and his sister, Georgiana, on their way to spend the summer with their aunt, meet a traveling salesman who arouses their suspicion. Then when they get to their aunt's place, there is another surprise in the farmhouse kitchen. After that, events move quickly, with Alister and his sister, Julian and his sister, spending many long, dark nights in secret in their hiding place, in the hopes of solving a mystery which they feel sure exists.

Conference for National Cooperation in Aquatics. *The Science of Skin and Scuba Diving.* New York 7: Association Press. 1957. 316 pp. $3.95. Army and Navy authorities, medical specialists, and experienced divers and trainers from all parts of the country present thorough, complete, medically sound and up-to-date information on every aspect of the sport. Developed by the Conference for National Cooperation in Acquatics, this book is the first standard guide to adventuring with safety underwater . . . from "Basic Requirements for Skin and Scuba Diving" to "How To Organize a Diving Club."

Clear and authoritative information is provided on such subjects as these: medical aspects of diving; gases used for scuba; types of appartus (including repair methods); currents, visibility, marine life; first aid for diving accidents (exhaustion, bends, marine life injuries, *etc.*); scuba training techniques; budy system; *etc.*

Professional and advanced divers, beginning students, teachers and anyone who wants to learn skin and scuba diving can now possess the latest techniques and skills in the use of underwater gear from this fully illustrated manual. Each of the chapters is by a specialist in the subject discussed.

CORWIN, E. S. *The President, Office and Powers.* New York 3: New York University Press. 1957. 533 pp. $6.50. The author has brought his book up to date by tracing the political developments during the past nine years, from President Truman's last term in office through the present administration. In keeping with the candid and provocative discussion of current issues, there is a special enlarged section on presidential disability and the provision for succession.

As in the previous editions, the general character of the work remains the same. It is primarily a study in American public law, with an approach that is partly historical, partly analytical, and partly critical. The central theme is the development and contemporary status of presidential power and of the presidential office under the Constitution, but the personal and political aspects of the subject are also covered. Professor Corwin discusses the historical and philosophical conceptions of the executive power of government, the changes that have taken place in the manner of electing the President, the tenure of his office, the electoral college, and the duties and responsibilities of the President as chief administrator, commander-in-chief of the Armed Forces, initiator of foreign policy, and legislative leader.

COSTAIN, T. B. *Below the Salt.* New York 22: The Literary Guild of America, Inc., 575 Madison Avenue. 1957. 480 pp. $3.95. This is the story of how one of the most wicked kings of England, John, was forced to sign the *Magna Charta.* It is also the story of Eleanor, the "Lost Princess," who had a better claim to the throne of England than her uncle, King John. Though Eleanor did not become Queen of England, in the author's story she found a happiness that wearing the crown of England would never have given her.

The story begins in America of our time. Richard O'Rawn was an elderly man of great vitality who found he could recall scenes of a bygone world. He wanted to go to England to visit the places he could remember as from another life. Richard first landed in Ireland. There he visited the old home of the O'Rawns. Though he had never been in Ireland, he disputed his cousin's claim that the present castle was built on the original site. Workers brought out the original foundations where Richard said they would be. Again, in England, Richard pointed out a stone that was the entrance to an underground crypt which held treasures that were not known to exist.

From the present-day scenes, the author takes his readers to the days of the Norman conquerors. King John had taken the throne of England when his brother, Richard the Lion-Hearted, died. Another Richard, Richard of Rawen, was the son of a Saxon noble whose lands had been take in the Conquest. He was sent on a secret mission to Eleanor, John's niece. Soon after he met Eleanor, he learned she had been brought as a prisoner to Corfe Castle, an impregnable fortress in the south of England. Many nobles in England, alarmed by John's cruelties and injustices, believed Eleanor should be Queen and joined Richard in plotting to rescue Eleanor from Corfe Castle.

But the real hero of the story is Tostig, Richard's lifelong friend. Tostig had the brains to devise plans and the courage to carry through the most dangerous plots. It was Tostig who helped Richard rescue Eleanor, and it was later Tostig who helped Stephen Langton force King John to sign the *Magna Charta.*

COURLANDER, HAROLD. *Terrapin's Pot of Sense.* New York 17: Henry Holt and Company, Inc. 1957. 125 pp. $3. A folklorist, the author presents in this book a varied selection of well-written tales told as if by a Negro storyteller. Among them are the familiar ones of Rabbit teasing Fox . . . Terrapin's running contest with Rabbit . . . as well as those of Old Boss

and his numerous farmhands, and the skirmishes of Devil and the Preacher. The author briefly tells at the end of the book how the characters and situations relate to folklore of other countries.

CROWDER, RICHARD. *Those Innocent Years.* Indianapolis 7: The Bobbs-Merrill Company, Inc. 1957. 288 pp. $4.50. In the early years of this century, celebrations featuring James Whitcomb Riley, the Hoosier Poet, often drew crowds bigger than the populations of the towns in which they were held. On the lecture platform, even in Boston, Riley talked to packed houses. He was to millions of Americans the interpreter of childhood, the poet who spoke to—and for—the ordinary man. Even today, children and grown-ups alike still love his verse, though he is rarely discussed in serious studies of poetry.

What was Riley? What was the secret of his peculiar appeal? Whether he was really the great poet so widely acclaimed in his own generation or just a versifier that the new critics of our day deprecate has often been debated. When Riley died, some of his obituaries compared him to great English poets, like Shelley. Others cautiously called him the spokesman of his generation, a fine writer of verse, but a little less than a true poet. Harriet Monroe, who like Riley very much as a friend, never included any of his work in her collections.

Riley, as the author demonstrates, was a complex man, not always sure himself where he fitted into the world in which he lived. But his continuing fame is certain, if only for one reason. Riley was the last sweet singer of the Victorian age, the last poet of that optimistic time before great wars and great depression pressed home the harsh realities of the world. There was a charm in that time of innocence—a charm that makes us look back on those years with lingering nostalgia.

CUNDIFF, R. E., and BARBARA WEBB. *Story-Telling for You.* Yellow Springs, Ohio: The Antioch Press. 1957. $1, paper; $2, cloth. A handbook of help for story-tellers. Contains discussions on the importance of story-telling and on how to tell stories, also includes a selected bibliography and some sample stories.

DALY, MAUREEN. *Twelve Around the World.* New York 16: Dodd, Mead and Company. 1957. 251 pp. $3.50. This is an account of a journey with twelve destinations: twelve separate stories of young people, their lives and their countries, from the glacier wastes of Iceland to the cool, remote forests of Nigeria. A dozen teenagers, a dozen countries—a dozen different stories—Francine Ach of France, Jasmine Naciri of Morocco, Luis Hernandez of Spain, Idowu Somnyiwa of West Africa, and others, alike in years and unlike in so many other ways; and the bullfight, the bridal hut, the Paris cafes, the banana groves—the plans, the schools, the hopes. This is a person-to-person report on the lives of foreign youth, how they live, where they live—and what they want to do with their lives.

DALY, R. W. *How the Merrimac Won.* New York 16: Thomas Y. Crowell Company. 1957. 223 pp. $4. The question of the true victory in the near-legendary battle of 1862 between the *Monitor* and the *Merrimac* is newly approached and explored in this book. The title indicates the author's verdict, reached after careful examination and assessment of the multiple factors involved in the incident.

The concept of the book is simple. Armed with elementary definitions of military principles, the author has entered the jungle of official records with one paramount question: "What were the strategic and tactical objectives of the commanders of the two ships?" In the thousands of pages previously

written on the subject, this vital question has not been fully framed or answered. An answer was not an easy thing to find, but the search for it brings to fresh emphasis the drama of a man against a ship—McClellan versus the *Merrimac*.

de CERVANTES, MIGUEL. *Don Quixote*. New York 20: Pocket Books, Inc. 1957. 464 pp. 50¢. Cervantes conceived of this book as a biting satire on the Spain of his day. Don Quixote, a seventeenth-century Spanish gentleman as a knight-errant and with his squire, a country bumpkin, sallied forth in search of knightly adventures. The author has transformed a figure of ridicule into a truly noble hero.

DIRKSEN, JOAN. *I'll Find My Love*. New York 18: Julian Messner, Inc. 1957. 190 pp. $2.95. College was a wonderful new life for Till Prentiss, for it gave her an opportunity to be independent of her family and free to make her own decisions—and her own mistakes. Till's first mistake was falling desperately in love with smooth, sophisticated Seth Whitney—or was it a mistake? He was handsome, attentive, wealthy. He was notorious for rushing a girl and then leaving her flat. Yet Till had faith in Seth, even though he never spoke of love; even though Mac, her childhood friend, warned her against him.

DOUGLASS, E. L. *The Douglass Sunday School Lessons 1958*. New York 11: The Macmillan Company. 1957. 502 pp. $2.95. Special features that have made this book a leader are: audio-visual aids; scriptural passages printed in full (King James version); hints to teachers; discussion topics; current applications; concise explanations; and complete lesson plans. The main points of each lesson are printed in bold face type so that the teacher has a summary of the day's work at a glance. The list of helpful books will be found especially valuable.

DU JARDIN, ROSAMOND. *Senior Prom*. Philadelphia 5: J. B. Lippincott Company. 1957. 192 pp. $2.75. The climax of one's last year in high school is, of course, Senior Prom. From Christmas vacation on, it had been a busy and happy time for Marcy. There was her appointment as feature editor of the school paper, and an exciting trip to Washington ending with two glamorous nights in New York. There were the chess games with old Mr. Tuttle, and of course homework and housework.

But more important than these things was the problem of Bruce and Rick. They both were important in Marcy's life, as Steve, now in college, no longer was. Bruce, with his yellow convertible, and his charm, his humor, and good looks—Rick, reliable, unselfish and attractive, but shy and unable to dance—and Senior Prom a few weeks off!

EISEMAN, ALBERTA, and INGRID SLADKUS. *Monica*. New York 16: Dodd, Mead and Company. 1957. 191 pp. $2.75. To Monica Cole, her summer apprenticeship on a large women's magazine held so much promise that she soon faced her first really grown-up decision. Should she turn down a scholarship to college and stay at her job? Monica determines to do just that . . . and to succeed at night school as well.

Her two new worlds bring hard work and many obstacles, along with romance and good times. So intriguing, for instance, are her show business assignments, her close contact with entertainment people and her association with the sophisticated young fiction editor, that it takes near failure at her studies to make Monica find herself. Eventually, her friendship with Larry Simon, an engineering major, helps complete her course to adulthood.

ELIOT, ALEXANDER. *Three Hundred Years of American Painting.* New York 22: Random House, Inc. 1957. 328 pp. (9" x 12½") $13.50. This is more than a book about painting, more than a book about America, seen fresh and whole. Here the people and places that make up America are captured for all time—just as they lived and looked when this nation was founded, as they live and look today.

This is the first time that the masterworks of America's painters have been assembled in a continuing story that reflects the full sweep of American life and thought. The 250 carefully selected illustrations clearly demonstrate the stature that American painting has achieved. The text, in preparation for the past two years with the help of many of the nation's leading art authorities, presents our best-known painters not just in terms of their work but also as living men and women, actively participating in the American history their pictures reflect. This is a story illustrated by a rich and vigorous native art, nature in its conceptions, bold in its techniques. Taken in its entirety, it is a story important as history, exciting as romance, and a distinguished contribution to an understanding of America and Americans.

EVERS, ALF. *Selective Service: A Guide to the Draft.* Philadelphia 5: J. B. Lippincott Company. 1957. 191 pp. $2.95. The book contains an extraordinary amount of detailed information that does just what he hoped it would do—gives to teenagers who face their eighteenth birthday all the facts they could need about selective service: registration, classification, questionnaire, volunteers, reserves, mental and physical exams, and many other aspects of the draft. The author has spent many months collecting the material in this book and making changes suggested by the Selective Service people who read the manuscript unofficially. An index is included.

FEDDER, RUTH. *You the Person You Want to Be.* New York 36: Whittlesey House, McGraw-Hill Book Company. 1957. 224 pp. $3.50. Here is an important discussion of the special problems of late teens by a well-known psychologist, whose earlier books have been of immeasurable help and interest to thousands of young readers. The author now invites men and women to consider the kind of persons they would like to be, and, through provocative discussion and many case histories, she helps them to see the ways in which they can achieve this maturity and integration of personality. Discussions cover those problems of home, friends, dates, schooling, marriage, life work, and ideals which concern everyone. And readers will find here direction that is of value in present-day tensions and in the wider field of continuing human relations.

FINE, BENJAMIN. *How To Be Accepted by the College of Your Choice.* Great Neck, New York: Channel Press. 1957. 144 pp. (8½" x 11"). $1.95, paper-bound; $3.95, cloth-bound. Getting into college in the year immediately ahead is becoming a bigger problem each year. The number of students applying for entrance is increasing each year at a tremendous rate. With limited college facilities available and a shortage of instructors, the problem will actually become a serious one. In all probability many, many students may not be able to continue their education beyond the twelfth grade. At least many will not be able to enter the college of their first choice. This book discusses the situation that is being confronted by the colleges and universities as well as the students. It is composed of an introduction, 18 chapters, and an analysis of the entrance standards at each of our nation's accredited colleges, as well as information on costs, enrollment, programs, *etc.* in each. The title of each of the 18 chapters give some indication as to

the information contained in each: Completion Is the Keynote, Three, Four, or Five Best Choices, Your School Grades, College Entrance Examinations—What They Are, College Boards—How, When, and Whether To Take Them, Your High School Subjects, Extracurricular Activities, Letters of Recommendation, Your Autobiography, Visiting Our Colleges, Quota Systems, How To File Your Application, Connecticut College, The Matter of Money, Transfers, How I Advise My Own Children, A Word to Parents, A Word to Guidance Counselors.

Guide to Career Information. New York 16: Harper and Brothers. 1957. 213 pp. $3. This sourcebook of occupational information has been prepared to assist the career-minded young person and to help counselors, librarians, teachers, and parents take full advantage of the wealth of materials available. It lists over 800 books and pamphlets devoted to current job information which are grouped under 52 occupational categories. A brief resumé, including price, number of pages, and where the material may be obtained, follows each listing.

Occupations are arranged alphabetically from accounting through writing, with consideration of skilled, non-skilled, government, and public-service jobs. A section with resumés of related books follows each occupational heading, and directions for finding additional information are provided throughout. Of special interest to those encountering difficulty in selecting a field of work is the section on career guidance. There is also material on planning for a job while in college, job opportunities for those without college or high-school diplomas, and books on how to explore the job world.

HADAS, MOSES, translator. *Helidorus: An Ethiopian Romance.* Ann Arbor, Michigan: The University of Michigan Press. 1957. 287 pp. $4.95. A band of pirates on a hill near the mouth of the Nile, a laden ship in the harbor with no one aboard, a field strewn with dead bodies and the remains of a banquet, a lovely woman tending a wounded young man—so begins this third-century blood-and-thunder tale of Theagenes and Chariclea, written by Helidorus, a Phoenician of Emesus, son of Theodosius, and descended from the sun. This is the story of a young couple who forever escape, of adventurous voyages, separations, kidnappings, and disguises, of bandits in whom Chariclea's beauty inspire the most desperate love.

HAMSHER, FLORENCE. *Party Cues for Teens.* New York 22: Garden City Books, 575 Madison Avenue. 1957. 190 pp. $2.50. Here is a new and completely different approach to teenage party-giving. Beginning at the *beginning* of all entertaining—the hostess—this book discusses first the fine art of being a gracious one, then goes on to show step by step how to plan a successful party. It deals frankly with the role of the family in the party plans of the young hostess, and with her responsibilities to her parents. It tells her how to cope with difficult situations, gives her pointers on party dress, sample menus and recipes, and more than twenty icebreakers. It even tells her how to be welcome guest at someone else's party.

There are parties for every month of the year, including all of the appropriate holiday themes, as well as themes for special occasions. But more than that, this book covers every phase of entertaining the junior hostess may want to know about: an Easter brunch; a Christmas open house; an after-the-game football supper; a graduation supper dance; a record ramble; a progressive supper—even a formal tea.

HARLOW, A. F. *Henry Bergh, Founder of the A.S.P.C.A.* New York 18: Julian Messner, Inc. 1957. 186 pp. $2.95. As founder of the American Society for the Prevention of Cruelty to Animals, Henry Bergh was more than a defender of tortured beasts. His crusade led to the formation of the New York Society for the Prevention of Cruelty to Children and the enactment of our first child labor laws. Born in New York of an aristocratic family, young Bergh led the gay but aimless life of a nineteenth century playboy. Inheriting a fortune from his father, he idled about Europe for years, seemingly without purpose or ambition. Then at a bullfight in Spain he experienced his first fury at the plight of mistreated animals. Back in New York, he founded the A.S.P.C.A. and began the grim, uphill fight that rescued thousands of animals from lives of agony.

HARTWELL, NANCY. *My Little Sister.* New York 17: Henry Holt and Company, Inc. 1957. 187 pp. $3. Francy and her little sister Tina, 13, feel entitled to the same freedom in dating and social life as their school friends and can't help rebelling against their overly strict, cautious parents. Tina doesn't mind deceiving her parents about her dating, but Francy has a conscience and some respect for her parents' feelings. So it's with reluctance that she joins in a scheme with her best friend, Audrey, to evade her parents' watchfulness and enjoy dates and fun with the rest of her school crowd. Though the scheme comes to a deserved bad ending, Francy's friendships survive. A romance and a disappointment gradually lead her to a better understanding of herself. But she remains unsympathetic to her parents' point of view until Tina is involved in a very serious car accident and Francy is shocked into an understanding of their fears.

JONES, V. C. *Gray Ghosts and Rebel Raiders.* New York 17: Henry Holt and Company. 1957. 192 pp. $3.50. Covering a circuit of roughly 300 miles that had as its major function release of the Union prisoners held captive at Richmond, Virginia, the Confederate capital, the raid was planned and led by Federal General Judson Kilpatrick, one of the more colorful, if not one of the most capable, of the North's field officers.

Coming in the dead of winter, when both the elements and the roads were at their worst, it ended as a complete fiasco, due largely, it would seem, to a lack of military astuteness on the part of the expedition's leader. The factor that drew public attention and wide-spread criticism was the death of the second in command, Colonel Ulric Dahlgren, son of one of the North's most popular admirals. People noted that this was the second time that Kilpatrick had sent a junior officer to his death.

Potentially, the raid could have been a source of great renown for those who took part in it, for it might have brought the war to a close in the early part of 1864. Only fate and a few minutes saved from capture, at Dahlgren's hands, General Robert E. Lee, the commander-in-chief. His disappearance from action at that late stage of the conflict, it seems obvious, would have resulted in wholesale desertions. Many of the Southerners were held to the ranks only by their love and esteem for "Marse Robert."

KANNIK, PREBEN. *The Flag Book.* New York 16: M. Barrows and Company. 1957. 196 pp. $3.50. The book is arranged geographically, dramatically highlighting the fact that styles in flags distinctly suggest the location of a country in a particular region. For instance, the Scandinavian countries all have a cross in their flags; Turkey's half moon and star (ancient symbols of the Ottoman Empire) influence the design of other Mohammedan

countries; the vivid stripes of Jordan's flag, often called the Pan-Arabian colors, are seen in the flags of Iran, Syria, and Afghanistan.

Within most countries, the national flag and coat of arms are shown first, followed by a great variety of special flags: for heads of government, leading ministers and officials, government departments, *etc.* Shown, too, are such supranational flags as that of the United Nations, NATO, International Red Cross, and others.

There is a brief description of each flag. In many cases its history is given. Complete information is given on the proper display of the United States flag. A glossary of flag terms and an index complete this book.

KJELGAARD, JIM, editor. *The Wild Horse Roundup.* New York 16: Dodd, Mead and Company. 1957. 285 pp. $3. A band of top-flight authors of Westerns, all members of Western Writers of America, have organized an exciting roundup of wild-horse stories—with a couple of mules for good measure. Such experts in riding and roping as Bill Gulick, Rutherford Montgomery, Norman Fox, L. P. Holmes, Harry S. Drago, Hal G. Evarts, and, of course, the editor tell tales of fiery outlaw stallions and runty sage-brush broom-tails, of the one-man killer horse and the rodeo champion—and the ornery mule!

KNIGHT, CLAYTON. *Lifeline in the Sky.* New York 16: William Morrow and Company, Inc. 1957 pp. 264 pp. $6. The author had the full cooperation of the U. S. Air Force on his world-wide tour of MATS bases and installations that resulted in this book. The facts are all here, colored and highlighted by personal glimpses of the men who fly the planes and exciting accounts of their daring adventures in war and peace.

MATS is a relatively new joint service of the U. S. Air Force and the Navy —an unarmed command set up after World War II to cope with such emergencies as the Berlin Air Lift. Now MATS covers the globe as the logistics arm of the Strategic Air Command.

Both the exotic and the everyday features of MATS are vividly brought home by the many handsome and authentic illustrations made by the author "on the spot" from the United States to Thule, Greenland—from the Philippines to England. It is illustrated with 72 drawings and two beautiful paintings in full color.

Language Arts: Kindergarten Through Grade Twelve. Willows, California: Superintendent of Schools, Education and Welfare Building, Lassen and Oak Streets. 1956 (September). 131 pp. (8½" x 11") plus 4 separate charts—Primary Grades (1-3); Middle Grades (4-6); Junior High-School Grades (7-9); and Senior High-School Grades (10-12). $7 plus postage. This publication represents the combined efforts of thirty-five Glenn County teachers and administrators who met once a week for an entire school year to discuss and suggest areas of activities, philosophy, *etc.* in language arts. This is not a complete course of study in language arts; it includes a statement of philosophy, general overview, and sample units for each grade level, kindergarten through grade twelve.

The booklet is accompanied by four charts (33" wide x 27½" high), each covering three grades and outlining in general terms four areas of language arts—listening, speaking, reading, and writing. In addition blank pages are provided in the booklet for the teacher to write suggested units and also her comments.

McCULLOUGH, EDO. *Good Old Coney Island.* New York 17: Charles Scribner's Sons. 1957. 352 pp. $5.95. Coney Island is more than a national institution—it is probably the most celebrated amusement resort in the world. This book by a man whose family has helped to build the Island's fantastic reputation presents its lively and nostalgic history. Touched with sentiment, occasionally with acid, it is frank, outspoken, sometimes biting, but always imbued with humor.

After its original settlement, Coney passed through three well-defined periods that can be best described as notorious, elegant, and garish. The first was the time of Civil War deserters and bounty-jumpers, thimbleriggers and toughs, outlaws, and prostitutes. Next, the 1880's were the time of elegance, of the finest hotels and restaurants, a time when the sporting world, the theatrical world, and the world of fashion made Coney a truly glittering watering place. The third period was that of the nickel empire; when the subways reached the Island, the great hordes arrived and Coney grew cheap and garish. Now in its fourth period, Coney is becoming a seaside park of permanence and beauty.

From these broad phases, the author has selected eight or nine incidents, sometimes years in duration, which offer great variety of color and excitement and still reflect what was characteristic and unique about the resort.

McKOWN, ROBIN. *Authors' Agent.* New York 18: Julina Messner, Inc. 1957. 188 pp. $2.95. When Lorna Saunders arrived in New York, she was torn between anticipation and fear. Could she possibly enter the publishing field with no special training beyond a college degree and a love of books? She fought panic as the days passed in a futile round of job hunting. Finally, she was hired at Jay Danforth's Literary Agency as typist and switchboard operator. Her position was humble, but at least she was part of a glamorous profession.

Lorna learned about the tedious, routine work beneath the surface glamor; how a literary agent discovers and develops the talents of authors; how their material is sold; how magazine and book editors function. Learning the business from the ground up, she criticized manuscripts, studied contracts, handled foreign rights, helped form the TV department. But, she reflected, real life doesn't have the neat structure of slick fiction.

MILLER, D. D. *The Story of Walt Disney.* New York 17: Henry Holt and Company, Inc. 1957. 247 pp. $3.95. When Walt Disney arrived in Hollywood in 1923 with a $40 grubstake in his pocket, his mind was made up to one thing only: he would *not* take a job in the only branch of motion pictures he knew, the animated-cartoon field. The fact was, he told himself, that, although he was only 22, he'd gotten into cartoons too late. Paul Terry had beaten him out with his *Aesop's Fables*, hadn't he? And now could anybody top the success of *Felix the Cat?* Besides, real-life pictures were the mainstream of the industry. There's where a talented fellow could really make good.

Well, Disney never got his chance in the world of "real" pictures, but today his wonderful world of make-believe is considered by millions to be far greater and far more real (in the deepest sense) than most of Hollywood's creations. In 34 years he, almost singlehandedly, has made the animated cartoon into an indigenous American art form and brought that form to rich and powerful maturity.

New Horizons, World Guide. New York 17: Pan American World Airways, P. O. Box 1111. 1957. 576 pp. $1. This book is Pan American's convenient up-to-the-minute guide to travel anywhere outside the United States. It tells all the important travel news (16,478) facts about 87 countries around the world including information on customs, values, currencies, climate, clothing, places to go, *etc.*

O'CONNOR, RICHARD. *Johnstown the Day the Dam Broke.* Philadelphia, 5: J. B. Lippincott Company. 1957. 255 pp. $3.95. The Johnstown flood need never have occurred. Negligence was its cause, for the millionaire members of the fishing club at Conemaugh Lake had been repeatedly warned that their pleasure spot was a potential killer, liable to burst its bounds and send a wall of water thundering down the valley on the helpless city of Johnstown, Pennsylvania. On May 31, 1889, this very thing happened, and the outcome was a disaster which left 2,200 people dead and 967 missing.

This is a carefully-documented, hour-by-hour report of that catastrophe, beginning with the tense period leading up to it, while the people of Johnstown were recovering from the festivities of their Memorial Day celebration. The reader is taken into the homes of the citizens of the town to share with them the incredible drama of the flood itself with all of its horrors; and to witness the aftermath, the devastating fire which took the lives of many who had escaped drowning, the looting and vandalism, the arrival of sightseers and souvenier-hunters, and the bravery, self-sacrifice and hard work of those who put Johnstown back on its feet. Of great interest are the portions of the book dealing with the journalism of the day, of newsmen who overcome tremendous obstacles to get their stories through.

PERTWEE, ROLAND. *Rough Water.* Indianapolis 7: The Bobbs-Merrill Company, Inc. 1957. 224 pp. $3. It has been told, in a story called *The Islanders*, how Patrick Faraday was invited by very fat, very rich old Mr. Beckett to spend a Swiss Family Robinson summer in Devon. As companions, Pat chose Toby Frognall, who always thought about a thing before doing it, and Nick Watney, who did whatever came into his head. On an island in the River Alder, the boys made their camp and, with guns and fishing rods, lived off the land and had a wonderful time.

As this book begins, the day after a party for all their friends of the summer, the Islanders' life takes a new turn. Not all their earlier experiences were pleasant, but the really rough water is still ahead. Now for fly-fishing, rough water is helpful. It works the flies and pulls the line straight, and makes it easier to flick back for the next cast. Rough water also has a friendly way of tidying up boggles of line, so that one may not look quite so clumsy. One has a better chance of catching fish in rough water; they may even hook themselves. All this Pat had learned, and puts to good use with his first successful cast for a salmon—the fish of the Islanders' dreams.

POOLEY, R. C., editor. *Good Times Through Literature.* Fair Lawn, New Jersey: Scott, Foresman and Company, 19-00 Pollitt Drive. 1957. 592 pp. This is a revision of the former book published in 1951. The present organization is much the same as the previous edition since it has been reported as desirable by those using it. Those selections that did not receive favorable comment have been deleted and 49 new selections—22 prose and 27 poetry—have been included. There are also two new plays. The editorial features of the previous book used to develop the skills essential to sound interpretation have also been retained to a large extent. These include

interpretive questions following most selection with the purpose of stimulating discussion; author's articles to establish rapport between author and student so that the reader may gain a deeper understanding and appreciation of literature forms and techniques; unit introductions, reviews, and bibliographies; and a carefully worked out vocabulary program. Many colorful, new illustrations have been included with the result that the book should prove to be most attractive to ninth-grade students. The book is organized into ten major units.

POUNDS, N. J. G., and E. L. COOPER. *World Geography: Economic, Political, and Regional*, fifth edition. Cincinnati 27, Ohio: South-Western Publishing Company, 5101 Madison Road. 1957. 640 pp. $3.72, *Student's Workbook*, $1, each less school discount of 25 per cent. This is a revision of the book published under the title of *World Economic Geography* by York, Rowe, and Cooper. The new title and the descriptive subtitle properly indicate the new emphasis in the organization and content of this fifth edition. The text is designed to aid the student, not merely to know, but also to understand the geography of man. Regional physical factors are introduced to provide a basis for understanding the "why" of man's economic activities in the various regions of the world. It also treats political geography—boundaries, exchanges of territory, population and migration, government activities—as it relates to economic geography. Most of the book is written to help the student answer question of why man engages in certain activities to earn a living or to support life in the various areas of the world. It also stresses the interdependence of one region upon the economic products and natural resources of other regions. A scholarly treatment has been accomplished in a fiction-like style that will capture the interest of every student.

The book is divided into six parts to emphasize in proper balance the factors of economic, political, and regional geography that affect the activities and well-being of man. Political and economic geography is integrated and set against the background that nature provides. The authors have used a personalized style of writing with frequent use of the words, "you" and "us." The easy-flowing, fiction-like style will appeal to students and hold their interest. The simplicity of vocabulary will help the student to understand the various topics. The book is conveniently organized into sixty comparatively short chapters which may be used as separate units of study or grouped into larger learning units.

Each chapter is arranged for easy teaching and learning. A typical chapter includes (1) two-column presentation of text material; (2) use of clear subtitles for each new subject when it is introduced; (3) special diagrams and photographs to fit the textbook discussion; (4) use of italics when new and important words and terms are introduced and explained; and (5) a wide variety of challenging end-of-chapter materials, including: (a) text questions, (b) problems, (c) projects, and (d) topics for class discussion. Many photographs and special illustrations have been used for a specific purpose—to help the student understand more clearly the topics being discussed. Illustrations make up approximately twenty-five per cent of the book. All maps were drawn especially for the textbook. A relief map is given for each country. In addition, all place names used in the textual material are shown on location maps. Optional classroom materials include: (1) a workbook which provides an objective study guide for each assignment and maps and charts to aid in completing the end-of-chapter student activities and (2) a series of objective tests which provide a comprehensive testing program.

There are achievement tests and a final examination in the series which are sold only as a set. The teachers' manual, accompanying the book, contains suggestions for teaching the subject with detailed help for teaching each lesson. It also includes an important bibliography.

RIETVELD, JANE. *To Hide, To Seek.* New York 22: The Viking Press. 1957. 251 pp. $3. Hollis Baylor, in her fourth year at art school, falls in love with a picture in the students' exhibition without knowing who painted it. And when she discovers that the artist is the new young instructor whose appearance on the first day of the autumn term caused her heart to flutter so alarmingly, she knows something is happening to her that might change her whole life.

But her happiness, when Paul's devotion becomes more and more evident, is clouded with distress. For she knows she is not ready to exchange her companionship with her attractive brilliant father for a relationship of her own making. Paul asks her to marry him just when her father has accepted an architectural commission that will take him to South America for a year, and Hollis is torn by confused loyalties and a bitter sense of her own inadequacy.

Serious illness postpones the decision she must make, and when she goes for a long visit to a charming, elderly great-aunt in the South, the soft climate, beautiful surroundings, and companionship with kindly people help to restore her peace of mind, as well as her health. Then, through her efforts in behalf of lovable sixteen-year-old Rory, her great aunt's ward who has got into serious trouble, Hollis learns for the first time in her life what it is to forget herself.

ROBINSON, GERTRUDE. *The Mooring Tree: A Story of Jamestown.* New York 3: Oxford Book Company, Inc. 1957. 174 pp. $3. Young Jason Ware's resourcefulness and courage, his determination to win out over any hardship were the qualities an early settler of Jamestown had to have. When his father was unjustly imprisoned in England, Jason Ware decided to risk the journey to the New World by himself. With the Ware grant for Jamestown land sewn into his pocket, he stowed away on a ship bound for the newly settled colony. His survival from the hurricane and historical shipwreck at Bermuda, and his arrival with the battered colonists at Jamestown just as the first settlers were abandoning it make this episode in America's past dramatically vivid.

RUESCH, HANS. *South of the Heart.* New York 16: Coward-McCann, Inc. 1957. 316 pp. $3.95. The fortunes of war have made Auda a hostage in the Teeland capital, where the ambitious King Nasib, scheming for peace, even betrothes him to his favorite daughter, the Princess Lahlah. But when Auda's brother is killed at the King's order, Auda escapes with his faithful rascal of a slave, Yahya. As a result, war breaks out again, a war of revenge, and Auda finds himself in command of a column—the last desperate hope of his father for victory over the crudely modernized army of Teeland. His mission is to pass over the vast central desert of Arabia, known as the Heart, attacking King Nasib's forces from the South.

Incredibly, the previously peaceful and romantic Auda forges a formidable instrument of war out of the nondescript assemblage of beggars and outcasts given him by his father. With them he learns how to overcome fatigue, hunger, and thirst; the armoured cars and planes of the Teelanders; and, after incredible hardships, pushes on and reaches his goal and wins a measure of

victory—at least in the moral sense, for a strong and able man emerges from the Heart, ready for any trials life may bring him.

SECHRIST, E. H., and JANETTE WOOLSEY. *It's Time for Thanksgiving.* Philadelphia 2: Macrae Smith Company, 225 S. 15th Street. 1957. 251 pp. $3.50. A potpourri of Thanksgiving treats for everyone, this special collection is a holiday delight. The story of the first Thanksgiving and a history of Thanksgiving customs; original, royalty-free, easy-to-produce plays with Thanksgiving settings and themes; stories, poems, games, and recipes for young cooks—all make the book a treasury for this favorite American holiday. The stories include some of America's favorite authors—Dorothy Canfield Fisher, Dorothy Heiderstadt, and Aileen Fisher. The plays, written to be presented by children, enact well-known Thanksgiving situations—"Thanksgiving at Plymouth," "A Pioneer Thanksgiving," "How Autumn Came to the Earth," and "A Thanksgiving Nightmare."

SHAKESPEARE, WILLIAM. *The Merchant of Venice.* New York 20: Pocket Books, Inc. 1957. 140 pp. 35¢. One of the Folger Library General Readers' Shakespeare designed to provide the general reader with a modern text that is clear and understanding, with notes and explanations as may be needed to clarify obscure words and passages. It also includes 37 pages of introductory material. It is edited by Louis B. Wright and Virginia L. Freund.

SHAPIRO, M. J. *Jackie Robinson of the Brooklyn Dodgers.* New York 18: Julian Messner, Inc. 1957. 190 pp. $2.95. When Jackie Robinson shut the door on his baseball career in favor of an executive job with a restaurant chain, he closed behind him an era in baseball. A decade before, in 1947, he had put on the uniform of the Brooklyn Dodgers for the first time and had become the first Negro to play baseball in the major leagues.

As the man who broke the color line in baseball, Jackie was the target of rank bigots, jealous competitors, and the relentless needling of baseball's most practiced bench jockeys. Robinson accepted the responsibility of his pioneering role. Branch Rickey, who had brought him up from the Negro leagues for the great experiment, had warned Jackie to "turn the other cheek." And turn it he did, though his blood boiled and his spirit rebelled.

But Robinson's answer to his tormentors was in his spectacular play on the ball field. His colorful, aggressive running tactics on the basepaths drove the opposing players frantic. He quickly won the reputation as one of the clutch hitters in basball. More than any other member of the Dodgers, Robinson has been singled out as the player most responsible for the team's successes in the past ten years. He was "Rookie of the Year" for 1947, and won the National League's Most Valuable Player Award in 1949.

SMITH, REED; WILLIAM PAXTON; and B. G. MESERVE. *Learning to Write,* third edition. Boston 16: D. C. Heath and Company. 1957. 514 pp. $3.80. This text for the eleventh or twelve grade contains the fundamentals of good composition. Many kinds of writing are treated from the expository paragraph to the short story, including precis, talks, letters, and essays. This third edition brings the subject material up to date and adds a completely new chapter on the research paper. General principles of discussion are stated clearly and definitely, and are invariably demonstrated by examples. Techniques are closely examined and analyzed. To illustrate forms and techniques of writing, the work of professional authors and the work of students are used. The writing of an established author, contemporary or classic, presents the personal essay, letter, or descriptive paragraph at its best.

After discussion and illustration, writing begins. There are topics and suggestions for assignments, both interesting and varied. However, while plenty of definite writing topics are provided, provocative questions in the text encourage and train students to examine their own personal experience for subject material. The text guides closely the beginner who needs such guidance, but the more creative student is left scope to try his literary wings.

The book is divided into five parts: writing paragraphs and speaking; writing better sentences; vocabulary building; imaginative writing; and grammar, punctuation, and spelling. The wide variety of exercises, many listed under the heading *The Round Table*, makes this text valuable to students of varying ability. Exercises are designed both for individual and class use. There are many projects which allow the class, as a group, to consider a specific problem or organize an assignment together. Exercises are written and oral; they may stress analysis, emulation, or creativity. There are more than enough exercises—each instructor may choose those most helpful to his students.

The book correlates well with classes in English literature. Especially pertinent are units on the personal essay and short story and the extensive discussion of figurative language. The new chapter on the research paper serves any course that requires a research project. The emphasis on oral expression provides training particularly helpful in social studies courses.

SNOW, E. R. *Legends of the New England Coast.* New York 16: Dodd, Mead and Company. 1957. 286 pp. There is something about the sea and its shores that stirs the imagination of storytellers, and no richer source of legends can be found than the rugged coastline of New England. The author has devoted much of his life to collecting and retelling such tales, and in this volume he has gathered some of the most bizarre of the stories he has found.

His subjects range from fact to fancy and from as far back as the earliest colonial days to modern times. There are accounts of phantom ships and their spectral crews, mermaids who enchanted and terrified hapless sailors, and witches' curses that brought disaster to passing vessels. The characters are as unpredictable as the general who sold his soul to the devil and the pirate who became the self-appointed godfather to a baby born at sea. A legend maker himself, the author also recounts two recent events that already promise to become legends of the future, the sinking of the *Andrea Doria* and the refloating of the *Etrusco* from Scituate Beach.

SWEET, W. E. *Latin: A Structural Approach.* Ann Arbor: The University of Michigan Press. 1957. 530 pp. $4.25 paper; $5.50 cloth. This book attempts to apply the findings of structural linguistics to Latin in the same way that Charles C. Fries has applied them to the teaching and learning of English as a foreign language. The course it built around 360 basic sentences, which not only illustrate all points of structure but also serve as the basis for the pattern practices, which in turn give massive drill on these points. These basic sentences are *sententiae*, gathered from various centuries to give the student some idea of the vast scope of Latin literature. The narrative readings in many cases parallel the basic sentences in language or thought.

This book is written for teachers without previous training in structural linguistics who are dissatisfied with the traditional approach to Latin teaching and want to try something new. For them the following observations are suggested by the author.

Few, if any, of the grammatical explanations are like those found in traditional textbooks. Some of them you may find hard to understand. This does not necessarily mean that your students will find them difficult. Be chary of giving what may seem to be simpler explanations until you have had experience with the book.

In general, keep any talk *about* the language to a minimum. Students will learn Latin by hearing it, speaking it, reading it, and writing it, not by talking about it. Wherever possible, avoid the kind of talking about the language which we call translating. If the student can answer the questions in Latin, he knows the meaning of the passage. The slower student, who cannot at first answer the Latin questions, will gradually comprehend the meaning of the original through the questions and answers. If the questions given in the text are not sufficient, you can supply additional questions which will elucidate the point of difficulty. As your own skill increases, you will discover that you can do away almost entirely with translation as a teaching technique.

It is essential to proceed as fast as the ability of the class permits. No single lesson by itself can teach any item of structure; the student will only learn it after he has seen it in contrast with all other structures. To illustrate, in Lesson One the student learns that *viro* is ablative singular. No matter how astute, he cannot understand this *viro* until he sees it in contrast with the homophonous dative singular *viro* in Lesson Sixteen. If, through zeal for thoroughness, one were to spend two years on the first fifteen lessons, would the student ever comprehend that *viro* could be anything but ablative singular?

College freshman classes can proceed at the rate of one lesson per class meeting; high-school students, at half this speed. For a single assignment, the college student could learn ten basic sentences, master the pattern practice, and do the Self Test. A basic sentence is learned when the student, after hearing it given once in Latin, can repeat it or write it without hesitation or error. A pattern practice is mastered when a student can give the correct response to the stimulus without pausing to think. This may be tested by a tape recording in class, with the stimuli arranged in an order which is different from that of the book or learning tape. The purpose of the Self Test is to show the student whether he has studied the pattern practice well enough to answer the Self Test without hesitation.

Only a few minutes of each class period should be spent on checking the assigned work. With a tape recorder to give the Stimulus-Pause-Response of a pattern practice, a class of 25 students can be tested and graded in five minutes.

All of the pattern practices and basic sentences in this book have been recorded on tape by the Audio-Visual Center, University of Michigan; Ann Arbor, Michigan. To obtain copies of these recordings, send the Audio-Visual Center blank reels of tape on which the material will be recorded at a charge of 50 cents per reel. The master tapes, totalling twenty 7-inch reels, are recorded at 7.5 speed, but slower speed (3.75) or dual track copies may be ordered.

TEALE, E. W. *Dune Boy.* New York 16: Dodd, Mead and Company. 1957. 296 pp. $4. Written nearly fifteen years ago, before the author had become the nationally known author he is today this chronicle of the early years of the naturalist in the dune country of Indiana is considered by many readers to contain some of the author's best writing and to be a classic in its field. *Dune Boy* is an adventurous return to the June of life—to that golden

world which lies about us in our youth. In its pages are humor and drama and that same sensitiveness to the beauty of the outdoor world and the same stimulating freshness of writing which have attracted thousands of readers from *Grassroot Jungles* to *North with the Spring* and *Autumn Across America*.

THROWALD JURGEN. *The Century of the Surgeon.* New York 14: Pantheon Books, Inc. 1957. 432 pp. $5.95. This book is a tale of triumph and miracles. It traces the march of surgery which begins with the accidental discovery of anesthetics, the prerequisite to the development of surgery as an art. The author's creative impulse has been to ask when, why, and where the pioneering operations in the nineteenth century have been performed for the first time, operations on which the entire modern surgery is based. The answers to these questions result in a tremendously exciting story: step by step new areas are conquered by the scalpel. The daring knife probes into the abdomen, the kidneys, the bladder. Plastic surgery saves mutilated people from despair. The Caesarian section, formerly nearly always fatal, is made harmless. Appendicitis, once one of the great killers, is all but vanquished. And finally, for the first time, a surgeon's hand and needle dare touch a human heart.

In order to create a continuity in the story of the development of surgery, and to show it as happening within the lifespan of one man, the author has chosen the narrative device of an eyewitness. It is through the eyes of a young physician that the reader participates in the excitement of the operations and coms to know the personalities of the great surgeons. In this manner, the story of surgery comes close and alive. The human drama of the patient, the role of the doctor, the tension of the audience, all form part of the story. Flashbacks to the appalling methods of surgery before the discovery of anesthesia heighten the achievement of advanced surgical art.

TREECE, HENRY. *The Road to Milagard.* New York 11: Criterion Books, Inc. 1957. 254 pp. $3.50. Anxious for adventure and still longing for the sea, Harald, the young Viking hero of *Viking's Dawn*, is readily persuaded to join Prince Arkil of Denmark in a quest for the treasure guarded by the Irish giant, Grummoch. Thus begins a strange and exciting series of adventures which take Harald and his shipmates from their native fjords to Ireland, Moorish Spain, and across the Mediterranean to the golden domes of Constantinople (Miklagard), and, after many hardships overland through Central Europe, to their home again.

ULANOV, BARRY. *A Handbook of Jazz.* New York 22: The Viking Press, 625 Madison Avenue. 1957. 256 pp. $3.50. Jazz has come a long way in its rapid and colorful development from the blowers of New Orleans to the brilliant moderns—Brubeck, LaPorta, Parker, Tirstano, Mingus, and the rest. Today jazz has reached a high plateau of serious musicianship, and the time has come for a listener's guidebook—an authoritative and inviting introduction to America's most original art form.

This, then, is a brief summary of the substance of jazz, giving the data, historical and critical; that is, jazz then and now. It is a lively highlighted sketch of the music's origins and development, from its pre-history to its present. It discusses the instruments: what they are, how they differ in manufacture and use from "classical" instruments; the schools: New Orleans, Chicago, New York, Kansas City, swing and bop of the West Coast, new-classical in Detroit. Styles are described, with emphasis on the lines of tradition that connect all parts of jazz. The basic ingredients of jazz are defined: improvisation, the beat, color, enthusiasm, and irony. A five-inch

Shelf includes thirty-seven LPs that represent the essential substance of jazz history; a fifteen-inch Shelf includes seventy-four additional LPs of solid jazz achievement. Also included are some tips on collecting, the language, and a glossary of jazz terms; What you should know if you want to make a living in the jazz world; a Who's Who of hundreds of jazz performers, from Adderley to Zurke. Rounding out the factual information, there are chapters on "The Judging of Jazz" and "The Place of Jazz" in the constellation of the arts.

VENK, F. B. *Automotive Engines, Maintenance, and Repair.* Chicago 37: American Technical Society. 1957. 416 pp. $5.95. Few books in the entire field of industrial training can match the industry-wide coverage of this book. From their years of experience and continuous research and investigation, the author and editors of this book have evolved an eminently successful system of presenting the subject of automotive engines. The book is far more than just a "fix-it" book or service manual. It is a complete and logical *training plan*—a plan that works. The reader rapidly develops the ability to "dope out" any difficulty that arises; he does not have to accept "on faith" a quantity of general rules to which there are many exceptions. The new edition includes an up-to-date new chapter on foreign engines, covering both the small economy cars, such as the Volkswagen, and the high-powered sports cars, such as the well-known Jaguar, MG, and Mercedes-Benz.

The practices described in this book are service-proven. They leave nothing to trial and error. Instead, even the most experienced mechanic will find the information so practical and logical that procedures previously considered "tricky" or "time-consuming" will appear simple and routine by comparison.

WADE, T. L., and H. E. TAYLOR. *Fundamental Mathematics.* New York 36: McGraw-Hill Book Company, Inc. 1957. 394 pp. $4.75. Here, in a logically complete, yet simple readable manner, the authors treat the basic topics in mathematics which have come to be considered part of the general education of a well-informed person. The meanings of new terms and operations are defined and illustrated. The book follows the basic premise that there should be a balance between teaching for understanding and teaching for manipulation with emphasis on covering material. Because the authors feel that the processes of fundamental mathematics should not be approached as merely mechanical operations, they have tried to explain the principles behind these manipulations.

The fundamental ideas of elementary algebra are developed in a logical and orderly manner so that the student with a poor background will have an opportunity to review much of the mathematics he formerly studied, but in a more unified manner. Each fundamental operation is treated first for the numbers of arithmetic and then for the liberal symbols of algebra.

Specifically written for students who lack preparation for the study of the usual courses in first-year college mathematics, this text may also be used for courses in "advanced general mathematics" and "mathematics review" at the senior year, high-school level. In addition, it will prove helpful to the person who wishes to review mathematics through self-study and for training programs in industry where persons are employed to do tasks which require a ready knowledge of arithmetic and elementary algebra.

WERSTEIN, IRVING. *July, 1863.* New York 18: Julian Messner, Inc. 1957. 252 pp. $3.95. *July, 1863* brings to life five infamous days when wild mobs stormed through the streets of New York City, unleashing their hatred

against the National Conscription Act which allowed richer members of the community to buy their way out of the draft for three hundred dollars.

Despite the desperate efforts of the police, ten thousand men and women surged through the city looting and burning, storming public buildings, committing unspeakable atrocities, murdering or maiming anyone who stood in their way. The orgy of carnage that began when the Provost Marshal's office opened for conscription in New York on July 11—seven days after Gettysburg—went unchecked for five days until eleven Union regiments were released by the Secreary of War to quell the Draft Riots. Back and forth the scene shifts—to the mob; to the rabble-rousers, the self-seeking politicians and Copperhead agents who fomented the riots; to the terrorized citizens and innocent victims; and to the undermanned authorities and the officials, filled with misgivings and shortcomings, who had to make decisions on which the fate of the city hung.

WILLIAMS, PHILIP. *Journey Into Mission.* New York 10: Friendship Press. 1957. 190 pp. $1.25. This is the diary of a young missionary who spent five years in Japan. It reveals opportunities and problems a Christian Missionary faces in lands abroad.

WYNDHAM, LEE. *Lady Architect.* New York 18: Julian Messner, Inc. 1957. 187 pp. $2.95. Deane Winters, architect, knew she was entering a field where women were not yet too readily accepted. But all her life, she had longed to create the kind of houses only a woman could plan and appreciate, and, if it meant working doubly hard, she was determined to prove that, with imagination, perseverance and skill, a woman could hold her own in a man's world.

For two years she worked as a draftswoman, gaining practical experience and firsthand knowledge, longing for an opportunity to design a contemporary home. Then she got her first "big" assignment—for an eccentric client she must create a medieval castle, with only three months in which to produce plans down to the last detail! Much as Deane dreaded the task, it challenged her abilities, and, if she succeeded, she would be taking her first long step toward establishing her reputation and integrity as a first-rate architect.

Pamphlets for Pupil-Teacher Use

BAKER, S. G. *Dimensions of Technological Change.* Wilmington, Delaware: Organic Chemicals Department, E. I. du Pont de Nemours and Company. 1957. (October). 12 pp. Free. A speech by the general manager given at the Pacific Northwest Personnel Management Conference in Seattle, Washington.

Better Utilization of College Teaching Resources. New York 22: The Fund for the Advancement of Education, 477 Madison Avenue. 1957. 32 pp. Free. Describes in some detail the program of grants for utilization of college teaching resources and the second group of awards granted under this program. A similar publication was issued last fall on the first series of awards. The Fund is currently underwriting an independent evaluation of the first series of experiments supported under this program. A report, resulting from this evaluation, will be prepared and distributed during the present academic year.

The Cost of Paper Food Service in School Feeding. New York 17: Field Research Division, Paper Cup and Container Institute, Inc., 342 Madison Avenue. 1957 (October-November). 16 pp. Free. A report on the cost of paper food service in three schools, made under actual operating conditions and according to criteria set up by a leading firm of accountants specializing

in institution management, has been published by the Field Research Division of the Paper Cup and Container Institute. This report presents evidence that paper service, with its accepted advantages of assured sanitation and convenience, costs no more than conventional service.

This is the third publication in a series which points out how paper can be useful in a broad variety of school food-service situations. The first, *Solving Problems with Paper Service*, is a 48-page booklet offering solutions to many of the problems faced by officials in providing school lunches, and includes information on many ways in which ingenious managers are meeting the difficulties of working with shortages of space, equipment, or funds. The second publication, *Designing School Kitchens for All-Paper Service*, shows the savings in construction and equipment costs when school kitchens are planned for the use of all-paper service.

Dedication Programs. Missoula, Montana: Missoula County High School. 1957. 32 pp. Contains a history of the school system, the dedication program, and many pages of pictures of the past as well as of the many facilities provided in the new two million dollar school building on a 52-acre site.

DEERING, E. R., compiler. *Attendance Accounting in California Public Schools.* Sacramento: California State Department of Education. 1957. (October). 120 pp. Gives information concerning laws and regulations relating to the recording and reporting of pupil attendance and suggests procedures for uniformity throughout the state in reporting.

Department of Classroom Teachers. *The Teachers Salary Committee and Its Work.* Washington 6, D. C.: National Education Association. 1957. 96 pp. $1. Although several state education associations now have issued helpful guides for salary committees, requests still come to the NEA for the kind of information that appeared in the six-bulletin series, now long out of print. The present bulletin has been prepared to meet this need. It is based on current reports from local salary committees, but it also borrows from the state association booklets and other sources. This booklet is the result of another cooperative enterprise involving the personnel of the NEA Research Division, the NEA Division of Publications, and the NEA Department of Classroom Teachers.

DOUGLAS, M. P. *The Pupil Assistant in the School Library.* Chicago 11: American Library Association, 50 East Huron Street. 1957. 68 pp. $1.25. The purpose of this brief presentation is to provide for the librarian an outline and guide for initiating and implementing an effective program of student library help which can be adapted to his own locale. The bulletin is divided into two distinct parts, the first of which contains recommendations for initiating and developing the program. The second part is made up of representative examples of forms and other materials which have proved useful in one or more schools.

FRANCKE MAX, editor. *1958 CRS Book Catalog.* Brooklyn 13: Children's Reading Service, 1078 St. John's Place. 1957. 64 pp. A brief annotated list of books graded from kindergarten to senior high school that may be ordered from one source at a discount. Also available from the same source is the *C. R. S. Audio-Visual Catalog*, listing over 1,000 phonograph records and filmstrips by topic and grade level. One copy *free* on official letterhead; otherwise, 25 cents.

GARDNER, G. H. *Pastimes of Colonial Children.* New York 1: The William-Frederick Press, 313 West 35th Street. 1957. 36 pp. $1.50. Describes work, toys, games, *etc.* of children in colonial times.

GREENLEAF, W. J. *Careers in Atomic Energy.* Washington 25, D. C.: Superintendent of Documents. 1957. 40 pp. 25¢. Discusses what atomic energy is; its application, government control, occupations, training, and other important areas of interest to one considering a career in this field.

HENRICKSEN, H. C. *Planet Problems.* New York 1: The William-Frederick Press. 313 West 35th Street. 1957. 56 pp. $2. Science-fiction stories.

HOLLIS, E. V., and Associates. *Costs of Attending College.* Washington 25, D. C.: Superintendent of Documents. 1957. 100 pp. 45¢. A study of student expenditures and sources of income based on full-time, single undergraduates students in 110 colleges located in 41 of the 48 states and the District of Columbia It is an analysis of the data obtained from replies to a questionnaire received from 15,316 students—a random sampling. The cost of attending college in 1956-57 averaged $1,500 a school year at public institutions and $2,000 at private ones. These costs included educational and living expenses. This is practically double that for attending college in 1940.

JAMES, SELWYN. *The First Fifty Years, 1907-1957.* New York 7: Association Press, 291 Broadway. 1957. 20 pp. The story of the publishing house of the Y. M. C. A.

JOHNSON, R. H., compiler. *School District Property and Equipment Accounting.* Sacramento: California State Department of Education. 1957 (September). 24 pp. Contains material developed by the Accounting Committee of the California Association of Public Schools Business Officials in cooperation with the State Department of Education.

MERSAND, JOSEPH. *Discovering the Individual in Large Classes.* Jamaica 32, New York: The Author, Jamaica High School, 168th Street and Gothic Drive. 1957. 4 pp. One copy free. A reprint from the October 1957 *English Journal.*

Official Report of the Department of Classroom Teachers, 1956-57. Washington 6, D. C.: Department of Classroom Teachers of the NEA. 1957. 96 pp. Contains officers', committees', merit rating, 14th Classroom Teachers National Conference reports, also the Department's platform, and resolution, and other information.

OGLETREE, J. R. *Person-Centered In-service Education—Why Not?* Lexington: College of Education, University of Kentucky. 1957 (September). 41 pp. $1. The author advances a theory which, if applied, would reduce the ineffectiveness of many teachers, schools, and programs.

Our Teachers—Their Importance to Our Children and Our Community. New York 17: National Association of Manufacturers, 2 East 48th Street. 1957. 22 pp. Discusses the role of the teachers in American education.

SHEEL, M. A., and P. B. HALE. *Social Studies Teaching Aids.* Washington 6, D. C.: National Aviation Education Council, 1025 Connecticut Avenue, N. W. 1957. 106 pp. $1. Instructional aids prepared for the Illinois Curriculum Program. Part I spells out objectives of aviation education for secondary-school social studies; Part II suggests a wide variety of aviation educational activities. These activities are organized into three major sections: Civil Aviation, A Major American Industry; Airpower for National Security; and Airways to World Understanding. Also includes a classified, annotated bibliography.

SOLOMON, BEN. *The Problem Boy.* New York 3: Oceana Publications, 80 Fourth Avenue. 1957. 96 pp. $1.50, paper; $2.50, cloth. Probes behind the pious attitudes of those who wring their hands over juvenile delinquency, but

do nothing about it. Here is a popularly written analysis of the delinquency problem, dealing with the "vulnerable" children before they get into trouble. Principles, techniques, and do's and don'ts are suggested.

SONNE, C. L., compiler. *Resource Handbook.* New York 17: American Association for the United Nations, Inc., 345 East 46th Street. 1957. 20 pp. 15¢. A bibliography of books, games, and program aids for teaching United Nations and world understanding.

SPEARE, M. E. *The Coal Industry.* Cambridge 38, Massachusetts: Bellman Publishing Company, P. O. Box 172. 1957. 32 pp. $1. This is one of a series of monographs in the Vocational and Professional Monograph Series. These monographs are used in connection with guidance activities wherever general counseling work is conducted and for individual references purposes in the choice of a career. The manuscript for this monograph was written by an expert in this particular field and was edited by a guidance editor. Each pamphlet includes material on history of the occupation or industry, qualifications for employment, training required, methods of entry, opportunities for advancement, earnings, general trends in the occupation or industry, and sources of further information.

Strengthening Science Education for Youth and Industry, Proceedings of the Seventh Thomas Alva Edison Foundation Institute. New York 3: New York University Press, Washington Square. 1957. 172 pp. (8½" x 11") $5. A distinguished group of educators, industrialists, and government personnel discuss the responsibilities of the home, industry, and the school for strengthening science education. Papers included in these proceedings are by Ralph W. Tyler, Alan T. Waterman, John R. Mayor, John R. Dunning, Gordon B. Carson, Sherrod E. Skinner, Everett T. Welmers, John Turkevich, Hyman G. Rickover, and Carroll V. Newsom. Also included are the discussions following the presentations.

They Also Serve Through Boys' Club. New York 16: Boys' Clubs of America, 381 Fourth Avenue. 1957. 117 pp. Contains the Boys' Club Code, a history of the Boys' Club Movement, a list of officers, and a list of clubs under the assistance of 22 organizations, showing the type of assistance each of these organizations gave to each other.

U. S. Aviation Today. Washington 6, D. C.: National Aviation Education Council, 1025 Connecticut Avenue, N. W. 1957. 96 pp. 35¢. Contains pictures, drawings, and descriptions of U. S. Aircrafts.

The Widening Circle. Washington 25, D. C. Superintendent of Documents. 1957. 60 pp. 25¢. An account of public-private cooperation in the International Exchange Program of the U. S. Department of State.

WINDHAM, F. F. *A Bible Treatise on Segregation.* New York 1: The William-Frederick Press, 313 West 35th Street. 1957. 48 pp. $2. An analysis of Biblical references concerning race relations.

WINGFIELD, R. J. *The Story of Old Ghana, Melle and Songhai.* New York 22: Cambridge University Press, 32 East 57th Street. 1957. 60 pp. 50¢. Selections from Lady Lugard's *A Tropical Dependency* and E. W. Bovill's *Caravans of Old Sahara* molded into a continuous story for use in junior and senior English classes.

WNYE, Radio-Television Manual. Brooklyn 1, New York: Board of Education, Public Sales Office, 110 Levingston Street. 1957. 232 pp. 50¢. Contains a complete listing of programs of FM Station WNYE for the school year 1957-58 in addition to material designed to guide the classroom teacher in the use of the broadcasts.

News Notes

VISITING ASSOCIATESHIPS IN TEST DEVELOPMENT

Educational Testing Service will offer two Visiting Associateships in Test Development for the summer of 1958, one in Languages and one in Science. Each person will receive a stipend of $700 and reimbursement for transportation to and from Princeton. The Associateships will give experienced teachers an opportunity to study testing problems in relation to goals of instruction. In their work with the Test Development staff from June 30 to August 29, 1958, the Associates will become familiar with testing techniques, and at the same time they will bring frontline experience to bear on the problems of evaluation in nationwide testing programs.

Both Associates will make critical analyses of existing test specifications and test questions, suggest improvements, and work on the preparation of new tests. They will work on tests at the college-entrance and higher levels. The Visiting Associate in Languages will devote particular attention to the testing of listening comprehension.

Each of the Associates should have four or more years of teaching experience in college or in secondary school, or in the two combined. In selecting the Associates, emphasis will be placed on academic scholarship and on successful teaching experience. Individuals who are interested in the broad problems of educational measurement will receive preference, although specialized training in this area is not expected. The Visiting Associate in Science should have a strong background in at least one of the physical sciences. The Visiting Associate in Languages should have experience in using the aural-oral teaching method and a familiarity with basic linguistic principles. Proficiency is expected in one of the following: French, German, Spanish; a working knowledge of one or both of the other languages is desirable.

All applicants should submit completed application forms by February 28, 1958. Appointments will be made by March 31, 1958. College transcripts may also be needed, in which case ETS will request applicants to send them. Requests for application forms, completed applications, and all inquiries should be addressed to Mrs. W. Stanley Brown, Test Development Division, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

COLLEGE BOARD ADVANCED PLACEMENT PROGRAM

The College Entrance Examination Board offers the Advanced Placement Program in the interest of able students of secondary schools which enables these students to undertake work commensurate with their abilities, and of colleges which welcome freshmen who are ready for advanced courses.

The Advanced Placement Program provides descriptions of *college-level* courses to be given in schools and prepares examinations based on these courses. Colleges, in turn, consider for credit and advanced placement students who have taken the courses and examinations. The program is thus an instrument of cooperation which extends the educational opportunities available to able and ambitious students by coordinating effectively their work in school and college.

The Advanced Placement Program is in its third year as a College Entrance Examination Board project. The Program operates through a Director who works with a general supervisory body, the Commission on Advanced Placement. The College Board is a membership association founded in 1900, with a present membership of 184 colleges and universities and 33 educational associations. Its office is located at 425 West 117th Street, New York 27, New York. The first Director of The Advanced Placement Program, 1955-57, was Charles R. Keller, who was on leave from Williams College. The 1957-58 Director is David A. Dudley, on leave from the Massachusetts Institute of Technology. In its operation of the Advanced Placement Program, the College Board has the help of the Educational Testing Service.

The Advanced Placement Program begins with college-level courses given in secondary schools to able and ambitious students. A school which wishes to undertake such advanced work does not need to secure permission to do so, but it should be sure that it understands the Program. The Director is always ready to answer questions; he has visited and will visit many schools. Teachers who are setting up college-level courses should read the course descriptions in the booklet, *Advanced Placement Program.* They are also advised to get in touch with teachers in schools which have advanced work and with the appropriate departments in the colleges which many of their students enter.

In schools which cannot provide special courses, students may do college-level work through individual instruction of a tutorial nature in connection with a regular course.

There are examinations in twelve subjects: English Composition, English Literature, French, German, Latin, Spanish, American History, European History, Mathematics, Biology, Chemistry, and Physics. Prepared by committees of five teachers—three from colleges and two from secondary schools—the examinations last for three hours. Essay questions prevail, supplemented in the American History, European History, Mathematics, Biology, Chemistry, and Physics examinations by objective test questions. In each modern language examination there is a half-hour listening comprehension section.

The fee for taking Advanced Placement Examinations is $10 for each student.

In the fall the schools are circularized to find out whether they will have students taking the Advanced Placement Examinations and how many students they will have in the various subjects. This circularization is not a registration procedure. Students who plan to take the 1958 examinations will register February 15—April 7. The examinations will be given during the week of May 12-16, 1958, at centers set up throughout the country.

In 1954, 18 schools had 532 students who took 959 examinations and entered 94 colleges; in 1955, the corresponding numbers were 38 schools, 925 students, 1,522 examinations, and 134 colleges; in 1956, 104 schools, 1,229 students, 2,199 examinations, and 130 colleges; in 1957, 2,068 students, 212 schools, 3,772 examinations, and 201 colleges.

Studies show that the students who entered college in the fall of 1954 and 1955 with credit and advanced placement or with advanced placement only, in practically every case received grades of A or B in sophomore courses taken as freshmen. The studies also show that these students stood high in their classes at the end of the freshman year. Reports to date on the 1956 group indicate similar satisfactory performance.

SCHOOL CUSTODIAN'S CONFERENCE

The twenty-first annual school custodian's conference was held at Purdue University, Lafayette, Indiana, on June 6 and 7, 1957, with school custodians present from twenty-five school communities in Indiana, and five from Illinois, and one from Ontario, Canada. Four general sessions were held in addition to a dinner meeting, with provisions made for four sectional meetings arranged in seven groups to discuss special problems in school custodian work and school-building maintenance. Special exhibit areas were set up by ten manufacturer's representatives to show the latest materials and equipment for school custodian supplies and equipment. Most of the Indiana cities only sent representative groups to this Purdue custodian's conference to supplement local and regional custodian's conferences that are held throughout Indiana during the school year.

Demonstrations of grounds maintenance were shown by James Sinninger, Campus Supervisor, Purdue University. Also a visitation was made to the new recreation gymnasium on the Purdue campus which was then under construction. The group sectional meetings were conducted by selected custodial supervisors from Indiana public-school systems who presented basic materials on the assigned subjects and answered individual questions of the custodians.

School administrators are now in agreement that school custodians must be instructed in the latest and best methods, equipment, and supplies available so that they can maintain clean, safe, and comfortable school plants and school-ground areas for all school classroom activities.

NEW GRADUATE AWARD DIRECTORY

To answer the needs of educators, the Advancement and Placement Institute announces publication of their first annual *World-wide Graduate Award Directory*. This new *Directory* has been prepared as an aid for American teachers, administrators, scientists, and social scientists who wish to subsidize the continuation of their education to obtain their master's or doctorate degrees or to do post-doctorate or independent research. The award guide includes information about the field of study, the duration of the awards, the amount of stipends, the number available, where the awards are tenable, the specific conditions, and to whom and when to apply. Over 350 Universities and Foundations in 45 states and 30 foreign countries have cooperated by submitting information about their awards which range in amount from $150 to $10,000.

The *Directory* covers a very wide geographical range from research in the Arctic to study in Ceylon. It includes new types of educational programs, such as educational internships and student deanships, as well as assistantships, graduate scholarships, and fellowships. It includes awards in the Arts, Business, Education, Child Development, English, Health and Physical Education, Home Economics, Industrial Arts, the Languages, Library Service, Mathematics, Psychology, Recreation, the field of Special Education, Speech, Social Casework and Groupwork, Vocational Education, as well as all the various fields of teacher education and the sciences.

This *Directory* is the first guide devoted entirely to advanced graduate opportunities available to educators of the United States. It fills a specific

need for an up-to-date, central reference source of graduate awards. It is the result of several years of research by the staff of The Advancement and Placement Institute, a non-commercial professional information and advisory service for the field of education since 1952. Copies may be examined at Graduate Schools, University Placement or Dean's offices, Public and College Libraries, or may be ordered from The Institute at Box 99E, Greenpoint Station, Brooklyn 22, New York for $2.00 a copy.

STUDENT EXCHANGE

Newton High School of Newtonville, Massachusetts, has participated in a School-and-School Exchange Program for a number of years. Last year one group of thirty students traveled to Philadelphia in February and a second group traveled to Pittsburgh, Pennsylvania, in April. Newton then played host later during the school year to the students from these two communities. This year's exchange program will involve the cities of Yarmouth, Nova Scotia, and Washington, D. C.

WITHIN OUR SCHOOLS

The Garden City Public Schools, Garden City, New York, has produced a printed folder entitled *Within Our Schools* as a means for informing the citizens of the community about its schools. The over-all size of the folder is 5¼" x 8⅝", with the back prepared for mailing with a postage paid Permit number on it and also space for addressing. It is composed of 16 pages with reading printed across the short width and with the bottom page longest and the pages on top each successively one half of an inch shorter. This one-half inch space is in color and contains the subject of the reading material included on the two pages exposed as they are opened by the reader. Information is given on the following topics: The School Calendar, Your School District, Board of Education, School Staff, School Plant, School and Community, Budget, School Hours, No-School Signals, Parent-Teachers' Association, Adult School, Kindergarten Age Requirement, School Activities Schedule, School Paper, Pupil Personnel Services, Physical Education, Music, Co-Curricular Activities, Bus Schedules. This was published as the "Back to School" issue.

YOUR FUTURE OCCUPATION

Teachers and guidance counselors, as well as students, will be interested in reading and studying the new semimonthly, 4-page (sometimes eight) publication. This career guide is issued 20 times during the school year, September through June. Each issue is attractively illustrated and printed in color. Articles deal with the various fields of occupations. Each issue covers a number of areas of endeavor, showing what the persons do in the occupations discussed, what preparation is necessary, what the pay is, what the opportunities are, and what other sources of information are available. All these articles are the result of careful research on the part of professional people with many years of experience in vocational guidance. They obtain the latest information available at the time of publication. Here is a real opportunity for the school to provide up-to-date data on a large variety of occupations and professions. For additional information and prices for quantity orders, see the advertisement on the inside back cover of this issue of THE BULLETIN.

SPEAKING TO AMERICAN YOUTH

Speaking to high schools is not new. But a new approach has received acceptance. A program which started seventeen years ago in six high schools in Louisville, Kentucky, and has spread to over two hundred and fifty schools is still growing. The idea is to get two speakers in the fall and two in the spring. They are usually, A, B, C, D, and E (*a*ttorneys, *b*usiness men, *c*lergymen, *d*octors or *e*ducators). They are asked to give the greatest speech of their life, telling what they have learned that young people ought to know. As a means of helping to save the speaker's time, portfolios are prepared giving helpful pamphlets, sample speeches, outlines, epigrams, and stories. But the speaker is not urged to use any of this at all. He may select all he wants of it or disregard it. What is wanted is his best message.

One cause for the success of the program is the emphasis on the careful selection of men. They are checked on four points: (1) Is he a person we want to put up before our youth? (2) Does he stand well in his business or profession? (3) Does he have a community interest? and (4) Can he make a speech? Anyone with an ax to grind is avoided. The attorney speaks of government and the responsibilities of citizenship. Let's prevent crime! The business man speaks of saving and investing and business management of one's own affairs. Let's prevent poverty! The doctor speaks on health, especially healthy attitudes. Let's prevent preventable disease! The clergyman speaks on the integrated personality that makes a wholesome citizen. Let's prevent crime, poverty, and preventable disease! For full particulars about this service, write to Speaking to American Youth, 241 East Walnut Street, Louisville 2, Kentucky. A limited amount of free material for high-school principals who are definitely interested is available.

A STUDY OF HIGH-SCHOOL STUDENTS' CHOICES

A significant study of New York City's June 1956 senior class of 27,756 young people (approximately 5% of the total U. S. school population) has been made by Samuel Schenberg of the Board of Education. The investigation was undertaken to determine the extent to which high-school students are studying science and mathematics, how many of those who plan to attend college hope to specialize in science or engineering, and whether homogeneous grouping of able students with an interest in these areas stimulates them to specialize.

His 32-page report indicates that 42% of the college-bound senior boys and girls in the academic and technical curricula wished to specialize in science. Girls chose pure science first and boys chose engineering, with pure science second. Extremely small percentages were interested in teaching science or mathematics. The data show a strong probability that the selection of careers as scientists and engineers increases in the ratio of 1:4:8 with the completion of two, three, and four years of science, respectively. In New York's three science high schools, containing 15.3% of all seniors enrolled in academic high schools, 93.2% of the boys and 98.5% of the girls planned to go to college, as against 87.5% and 78.3% in all other academic high schools. Of these, 82.0% of the boys expected to enter careers in science and 61.3% of the girls, as against 53.8% and 23.4%. The percentage of girls in the hugh Bronx High School of Science who indicated an interest in specialization was nearly three times the percentage of girls showing such an interest in the city as a whole.

Mr. Schenberg offers five courses of action suggested by the data: (1) more comprehensive educational and vocational guidance programs, staffed with trained guidance counselors, and an adequate testing service to identify the most able students; (2) homogeneous grouping of students with special interests in, and aptitudes for, science and mathematics, in special classes and special science high schools; (3) effective guidance in the area of scientific careers for girls; and (4) a minimum of three years of science and three years of mathematics for all college preparatory students; and (5) a corps of "well-trained highly professional and interested teachers of science and mathematics," with higher status and pay.

CAREER INFORMATION KIT

To increase the effectivity of guidance and vocational planning programs—in schools or counseling centers—Science Research Associates has just published its new edition of the *SRA Career Information Kit*. The kit now contains 174 file folders of available vocational materials—over 500 occupational information publications, 35 guidance publications, a manual and guide, and a complete cross-reference index. All booklets and articles have been screened by teams of evaluators and counselors under the direction of Dr. A. H. Edgerton, Professor of Education, University of Wisconsin.

The *Kit* describes the over-all employment picture, long-term occupational trends, specific career requirements, and employment opportunities within 93% of the major U. S. job areas. It helps the teacher or counselor aid students map future careers; it supplies information about academic requirements, skills needed, problems and difficulties, and opportunities involved for a variety of occupations. The materials have also been used successfully in adult education classes, school-community programs, and veterans' centers.

All materials are assembled in a large, sturdy, metal-reinforced transfer case which is immediately accessible. The *Kit* is arranged so that students, without supervision, can easily use the materials—each pamphlet and booklet is coded and filed by job category and with related job areas. A modified Dictionary of Occupational Titles Coding System makes the *Kit* as easy to use as a good card catalog. For further information and price, write Science Research Associates, 57 West Grand Avenue, Chicago 10, Illinois.

TV IN THE CLASSROOM

Clearly indicating the expanding role of television in formal education, TV was being used to implement instruction for thousands of pupils in at least a score of cities when schools opened last fall. About 15 of the non-commercial educational TV stations affiliated with the Educational Television and Radio Center are broadcasting lessons directly into schools, and at least 10 school systems are teaching by especially installed closed-circuit TV facilities in their own buildings. There are also any number of colleges and universities engaged in various teaching projects over TV facilities.

THE STRUGGLE FOR COMPETENT TEACHERS

The National Education Association (NEA) predicted that the struggle to provide competent teachers—especially science teachers—"casts its shadow far into the future." In a review of the teacher supply and demand picture over the past decade, the NEA reports that as the "sputnik" age sharpens the need for scientific and other specialized personnel, an alarming number of teachers specifically trained to develop that personnel are leaving the field before they

even enter it. The 28-page study, published by the NEA Research Division, is titled *The Postwar Struggle to Provide Competent Teachers.*

The years just ahead are certain to bring new problems in a different framework and of even greater magnitude, the study suggests. "Recent developments have greatly increased America's needs for scientists and engineers," it says. "Here the primary role of the public schools is clear—to identify and encourage the young student with aptitude for and interest in scientific studies. But the diminishing supply of new teaching candidates in science and mathematics fell precipitately from 1950 to 1955, and the modest increase recently does not compensate for that loss. Moreover, the aggressive competition of other occupations for this inadequate supply makes even more difficult the task of staffing the schools."

The review shows that while the loss of candidates is substantial in all areas of teaching, it is most acute in the sciences and math. This year, for example, 5,044 graduates are newly prepared for high-school science teaching. If the same percentage fail to enter the classroom as failed last year, the schools will lose over 40 per cent—or over 2,000—of these graduates to other occupations or activities. The report lists the specific teaching fields in which candidates are most likely to be attracted elsewhere. They are, besides science and math, commercial subjects, agriculture, industrial arts, and home economics. Graduates prepared to teach music, art, foreign languages, and social studies are more likely to enter teaching. Urging that students and all others considering teaching as a profession be kept up to date on supply and demand statistics, the report adds that "school administrators and college teachers have a responsibility" to help students apply this type of information to their own circumstances.

FELLOWSHIPS FOR HIGH SCHOOL SCIENCE AND MATH TEACHERS

Stanford University, with the financial support of the Shell Companies Foundation, is again making available to secondary school chemistry, physics, and mathematics teachers approximately fifty Merit Fellowships which provide an opportunity for advanced study in their teaching fields.

High-school teachers of chemistry, physics, and mathematics who have taught for a minimum of five years and who hold at least a bachelor's degree are eligible to receive these fellowships. Fellowships have been reserved for qualified applicants in every state west of the Mississippi and the provinces of western Canada.

Each fellowship provides for full tuition, fees, board and lodging in University facilities; a transportation allowance (which cannot exceed a round trip total of $150), and a stipend of $500 to compensate partially for salary that might have been earned during the summer. An allowance is also made for the purchase of textbooks.

Applications should be filed as soon as possible. All forms, recommendations, and transcripts must be received at the School of Education by February 1, 1958. Those selected to receive fellowships and the several alternates will be notified by March 1. Recipients of fellowships will need to file an additional form and a second photograph with the Graduate Admissions Office of Stanford University. This form will be sent automatically to those receiving a fellowship and to the alternates.

A statement of acceptance must be received from each Fellow on or before April 15. Those who are unable to accept a fellowship or who fail to notify the University of their acceptance will be replaced by one of the alternates.

EDUCATIONAL PERIODICALS

Would you have guessed there are more than 3,400 educational periodicals in the world? That many, in 79 countries and territories, are listed in the new yearbook of the Educational Press Association, *America's Education Press.* The UNESCO staff provided the listings that are from outside North America. This publication is available from Education Press Association, 1201 Sixteenth Street, N. W., Washington 6, D. C.; $2.50 a copy.

AN ATLAS OF WORLD HISTORY

A bird's eye view of world history is contained in a new *Atlas of World History* published by Rand McNally and Company, P. O. Box 7600, Chicago 80, Illinois. The book is an American-produced atlas of world history, and in addition to the most up-to-date information available, it contains new material not contained in any current atlas or textbook. The book begins about 100,000 B.C. and ends with statistical information for 1955.

The new atlas, which contains 92 pages of new color maps, 37 pages of new black and white maps, and 60,000 words of text, was edited by Robert R. Palmer, Dodge Professor of History at Princeton University, with contributions by the nation's top experts in the various fields of history. It is developed by a board of professors of history from leading universities.

'HOUSE PLAN' FOR HIGH SCHOOL

A high school featuring four self-contained "schools" or "houses" under one roof is now in use at Fairfield, Connecticut. Each of these houses in Andrew Warde High School enrolls about 300 students and is directed by a faculty housemaster and assistants. Students, although identified with the house to which they are assigned, share many overall facilities. These include workshops, home economics department, art studio, music department, library, auditorium, gymnasium, and special laboratories. Each house has its own activities center and its own administrative and guidance services. Daniel B. Fitts, headmaster, explains that the arrangement permits a large school program while capturing some of the advantages of smaller schools.

TEACHING WITH FILMSTRIPS

Many school people are familiar with the Landmark Book Series, published by Random House of New York, which deals with important events and people in American history. Enrichment Teaching Materials, Inc., 246 Fifth Avenue, New York, through David J. Goodman, Inc., Producer, has adapted many of these stories to filmstrips. Two of these many filmstrips have recently been adapted from two of the Landmark Books. These two Enrichment Filmstrips are entitled *The Panama Canal* and *The Pony Express*, each in full color, 16mm. *The Panama Canal* filmstrip, composed of 45 frames, is an invaluable aid in the interpretation of events that have become landmarks in American history. It supplies the historical background of unsuccessful attempts to build a canal from the Atlantic Ocean to the Pacific Ocean. It relates the details of construction, with emphasis on the almost unbelievable struggle of man against the forces of nature. Finally, the significance of the Panama Canal to world affairs is made clear to the pupil. This unusual organization provides a complete teaching unit in itself.

DEVEREUX SERVES

A full educational program, extending from kindergarten through the junior college level, is offered at Devereux for emotionally disturbed, as well as slow-learning children.

Instruction is highly individualized and planned to take advantage of the specialized learning techniques which are most effective for these children.

The curricula of the Devereux units include a solid academic program for college preparatory work; a vocational and commercial program; and programs of artisanship or craftsmanship, stressing the use of special tools and skills, either as preparation for admission to a vocational or trade school or as a means of attaining self-confidence and personality development.

Professional inquiries should be addressed to John M. Barclay, Director of Development, Devereux Schools, Devon, Pennsylvania; western residents address Keith A. Seaton, Registrar, Devereux Schools in California, Santa Barbara, California.

THE DEVEREUX FOUNDATION

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The other filmstrip, *The Pony Express*, composed of 42 frames, is an accurate presentation of a landmark in American history. Through dramatic visualization and narration, this full-color filmstrip provides a valuable aid in the teaching of social studies.

The unusual organization of the Enrichment Filmstrip makes it a complete teaching unit in itself. The background of transportation difficulties established in the first major sequence leads to the highlights of the event itself. The final sequence emphasizes the significance of the Pony Express in relation to the larger American scene.

Other filmstrips based on Landmark Books and released this fall are: *Pere Marquette, Sam Houston, Lincoln and Douglass: Years of Decision*, and *The Wright Brothers.*

Accompanying each filmstrip is a teaching guide which relates the story in brief, gives an introduction to the filmstrip, a brief outline of the different frames in the filmstrip, a series of follow-up short questions, a number of thought questions, and suggested things to do as follow ups. For full particulars about the many other Enrichment Filmstrips available and prices, write to the above address.

ANNUAL CONVENTIONS OF PROFESSIONAL ORGANIZATIONS

The American Personnel and Guidance Association will hold its annual convention during the week of March 31 to April 3, 1958, with headquarters in the Sheraton-Jefferson Hotel, St. Louis, Missouri. For information concerning registration, write to Miss Marie Bergmann, 5040 Grace Avenue, St. Louis 16, Missouri.

Henry C. Youngerman, President of the New York State Speech Association, has announced that the sixteenth Annual Conference will be held at the Onondaga Hotel, Syracuse, New York, on March 14 and 15. Miss Frances M. Brown of the Kingsford Park School, Oswego, is President-elect of the Association, and J. Edward McEvoy, School of Speech and Dramatic Art, Syracuse University, is General Conference Chairman.

Music Educators National Conference will hold its biennial meeting in Los Angeles, March 19-25, 1958. (State Presidents National Assembly and Other Official Group Meetings, March 19-20.) Additional information concerning the program will be released promptly to all MENC Federated State Unit publications, to the State Education Association periodicals as well as to the music press. Questions concerning the program should be directed to the MENC headquarters, 1201 Sixteenth Street, N. W., Washington 6, D. C.

"AMERICAS"—SPECIAL YOUTH ISSUE

AMERICAS, Special Youth Issue, is available in three separate language editions, November 1958 (English) and December 1958 (Spanish and Portuguese). This issue of the Pan American Union's monthly, illustrated magazine is dedicated to the youth of the 21 American Nations. Copies may be obtained for 35 cents from the Pan American Union, Washington 6, D. C. Besides the usual features on important hemispheric affairs, this issue contains a variety of interesting and timely articles on children throughout the Americas, ranging from "Why Juvenile Delinquency" to "Teenage Symphony," "Little League Champs," and "For Children Only—Unique Library in Sao Paulo, Brazil." There is also a fable about an unusual little donkey whose

90th anniversary

JOHN ROBERT GREGG

1867-1957

June 17 marked the 90th anniversary of the birth of John Robert Gregg, author and inventor of Gregg Shorthand, and perhaps the greatest shorthand genius the world has ever known.

Gregg Shorthand is taught in more than 20,000 schools of all types—high schools, colleges, universities, parochial schools, business schools. Hundreds of thousands of students learn Gregg Shorthand every year. In the minds of most people, shorthand means Gregg.

What does this mean to business and education? With the rapid expansion of our economic system, there is an ever-growing demand for *well-trained* stenographic and secretarial personnel. The materials and services of the Gregg Publishing Division enable schools to help meet the constant demand for stenographers and secretaries with *quality* training.

Gregg means more than shorthand, it means *quality* shorthand. You can be proud that your school teaches Gregg Shorthand —more than 97% of America's schools do.

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name is "Chachito." The many illustrations in this magazine make the text more vivid and entertaining.

The next special issue of AMERICAS will be the fifth annual Travel Issue (January 1958—English edition, February 1958—Spanish and Portuguese editions). Copies of this as well as the Special Youth Issue may be obtained by sending 35 cents to the Pan American Union, Washington 6, D. C.

MATH AND SCIENCE STUDENT ENROLLMENTS SWING UPWARD

Last year, for the first time since 1910, the percentage of high-school students enrolled in courses in science and mathematics increased over that for the previous year, according to a recent study made by the U. S. Office of Education on enrollment trends in science and mathematics. Even though the number of students enrolled in science and mathematics has steadily increased since 1910 along with the total high-school enrollment the percentage of those studying science and mathematics has gradually declined. For example, in algebra alone, although the total number of students enrolled in this subject increased from about 500,000 in 1910 to more than 2,000,000 in 1956, the percentage of high-school pupils taking algebra decreased from nearly 56.9% in 1910 to a low of 24.6% in 1952, then increased to 28.7% in 1956. The study shows that the percentage of public high schools offering courses in chemistry or physics at the 12th grade level increased from 77% in 1954 to 82% in 1956. Geometry courses offered in the 10th grade increased from 78% to 81% in the same period.

INVESTMENT PER PUPIL

Average current expeditures per pupil in public school systems in school year 1955-56 were $322 in cities of 100,000 population or more; $275 in cities of 25,000 to 100,000; $251 in cities of 10,000 to 25,000; and $263 in cities of 2,500 to 10,000. This information is contained in Circular No. 500 (15 cents), which covers cities of 25,000 and up, and Circular No. 501 (25 cents), cities of 2,500 to 25,000; both available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Lester B. Herlihy, specialist in educational statistics, prepared the reports.

JOB APPLICATION GUIDANCE

Poor presentation loses many fine job opportunities for applicants who would otherwise receive consideration, college students are told in a booklet prepared by New York University's Office of Placement Services. This 12-page brochure contains a list of 93 questions "most frequently asked by employers in interviewing college seniors" and "a list of 50 factors which can be responsible for costing an applicant a desired position. A job applicant properly prepared to present his qualifications to a prospective employer," the booklet advises, "has an excellent chance of obtaining a job. A good presentation will frequently gain recognition, even though background and job experience may not be as complete as originally desired by an employer." The NYU publication counsels students to give much effort to the preparation of résumés. Included in its pages is a suggested résumé format. The list of 50 factors that can defeat an applicant in his job quest was compiled after consultation with 153 companies. Included are the following: poor personal appearance, overemphasis on money, failure to look the interviewer in the eye, limp handshake, condemnation of past employers, sloppy application

PROFESSIONAL PROBLEMS OF TEACHERS

By the late ALBERT J. HUGGETT, *Michigan State University, and* T. M. STINNETT, *National Education Association.* Emphasizing teachers' responsibilities for improving their working conditions and for determining professional standards, the authors present practical information teachers will need to function effectively as members of their profession—in the school, in the community, and in professional organizations. *1956, 468 pages, $5.25*

DEVELOPING A HIGH SCHOOL CORE PROGRAM

By LUCILLE L. LURRY, *University of Kentucky, and* ELSIE J. ALBERTY, *The Ohio State University.* This practical book discusses the philosophical and psychological basis of the core program while emphasizing its specific purposes, structure and techniques. Abundant examples from core class indicate how the core program can develop successfully. *1957, 297 pages, $4.75*

PERSONAL ADJUSTMENT. An Approach through the Study of Healthy Personality

By SIDNEY M. JOURARD, *University of Florida.* Written from a positive point of view, this unique text discusses the factors determining the healthy adjusted personality. The author outlines each aspect of personality and compares the normal, unhealthy and healthy versions of the trait in question. The sections on expositions of interpersonal relations, love, the self-structure, and conscience are new to the field. *Ready Spring 1958*

THE PSYCHOLOGY OF ADOLESCENCE

By ARTHUR T. JERSILD, *Teachers College, Columbia University.* An illuminating account of adolescent life and growth, this text focuses attention on the adolescent as a person and on his attempt to discover and accept himself. Drawing on research findings, clinical studies and practical experience, the author integrates three essential approaches to the study of adolescence—objective, developmental, and personal. *1957, 438 pages, $5.00*

AN INTRODUCTION TO THE STUDY OF COMPARATIVE EDUCATION

By VERNON MALLINSON, *University of Reading, England.* A detailed, comparative study of contemporary educational policy and practice, this book examines the historical, political and sociological aspects of the main western European countries, the United States and Russia. The author compares, contrasts and explains the varying methods and purposes of the different educational systems. *1957, 249 pages, $3.50*

The Macmillan Company

60 FIFTH AVENUE, NEW YORK 11, N. Y.

When writing advertisers mention THE BULLETIN

blank, being late to the interview without good reason, superiority complex, and narrow interests. Copies of the booklet can be obtained from the Office of Placement Services, New York University, Washington Square, New York 4.

TIMELY OCCUPATIONAL INFORMATION

Schools are always in need of the latest information on occupations to assist high-school students in considering the choosing of an occupation. High-school students must have this information during the time they are attending school so that they may plan wisely for their future occupation. Generally this information is available only in book or pamphlet form and, as a result, the information contained therein soon becomes out of date. To satisfy the need for timely information, a group of educators are now providing this last-minute information in the form of a 4-page (sometimes 8-page) bi-monthly periodical entitled *Your Future Occupations*. It is published the second and fourth Mondays of each month from September through June. These students' career guides contain accurate, up-to-date information, interestingly written, on job requirements and training, job opportunities, and education guidance. Each issue is printed in color and is punched for insertion in the standard 3-ring notebook. Since the publication is written for student use, special classroom rates are available. For prices, see the publisher's one-page advertisement on the inside back cover of this issue of THE BULLETIN. Sample copies may be secured free by writing Your Future Occupation, Benjamin Franklin Post Office, P. O. Box 7408, Washington 4, D. C.

HI-FI JUNIOR LANGUAGE SETS

When Johnny hears a foreign language for the first time it may seem "strange." But he's just at the right age to quickly master a second language so that it becomes almost a mother tongue—instead of a "strange" collection of sounds. Now French, Spanish, Italian, or German may be taught the 7-to-14 year-old set at home by new hi-fi recordings. They are called "HRS Junior Language Hi-Fi Sets" ("HRS" stands for Hear . . . Repeat . . . Speak) and are issued by Ottenheimer: Publishers, Baltimore, Md., at $4.95 each and are sold in book and other shops.

Each set contains two 10-inch (33⅓ L.P.—one hour playing time) Hi-Fi records and an illustrated manual. The "HRS" set container is specially designed to be personalized with the child's name. Eight outstanding authorities of foreign language education for children developed the series. Each course is divided into twelve interesting situations common to the child's everyday life ("Our Dog Spot" . . . "Let's Count" . . . "A Date for the Movies"). In the dialogues based on these situations, the child hears first the English, then its foreign language equivalent.

Each sentence of the foreign language is spoken several times, first in parts, then in its entirety, with silent spaces left so the child can repeat what he has heard. Thus his natural aptitude for imitating speech is used to the fullest extent, and he learns thoroughly and without conscious effort—just as he learned to speak English, by hearing, repeating, and speaking. The voices are all native speakers, several from the Voice of America and the records were pressed by Columbia Transcriptions.

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by Thomas H. Briggs

"The book stirs one to thinking and unexpected feeling . . . . Here is a teacher after my own heart, one who makes the path inviting, removes old fears of inadequacy, settles one comfortably into an attitude of enjoyment." HUGHES MEARNS, *Professor Emeritus, New York University.*

Published in 1957 322 pp. Cloth, $4.00

BUREAU OF PUBLICATIONS

Teachers College, Columbia University, New York 27, N. Y.

HOME ECONOMICS AND ART CLASSES

Need help in teaching floral arrangements to your students in home economics and art? Here's the answer to that need—a free 24-page student booklet called *Flowers and You* and a *Teachers Guide* made available by the Society of American Florists. This is a booklet on the use and care of flowers. It covers how to select flowers for an arrangement, the tools necessary for working with flowers, types of arrangements and how they are made, the buying of flowers, and kinds and varieties of potted plants and their care. The *Teachers Guide* contains ideas for incorporating the booklet material into the curriculum plus a book and film bibliography. Also included are suggestions for special projects and class activities.

The material is planned for use in the junior high-school food preparation, home planning, and family living units of home economics; and for the study of line, color, and massing in art. In the senior high-school groups, it becomes a part of the higher level of family living education and the more advanced art study of floral arrangements. Copies may be secured free from the Society of American Florists, Sheraton Park Hotel, Washington, D. C.

ENGINEERING GRADUATES NEED LIBERAL ARTS TRAINING

The lack of liberal arts courses in the curricula of engineering schools is handicapping the advancement of graduate engineers in industry. This is the opinion of four executives of engineering companies. Oscar G. Burch, vice-president of research and engineering, Owens-Illinois Glass Co., had this to say: "In basic sciences and various engineering studies, recent graduates are as proficient, if not more proficient, than those of past years. In general, however, we find that engineering graduates are deficient in at least three aspects: They are unable to get their ideas across to management in a concise, understandable manner either orally or in the form of written reports. This indicates a lack of training in English. Their ideas of economics and general business are most inadequate and, they have a very limited background in the arts. This results in their having difficulties in industry in the general field of human relations, particularly with other departments of their own companies."

A suggestion, made by two of the executives, referred to the trend towards extension of the four-year undergraduate course in engineering to five years. Examination of this practice indicates that in most cases, the additional year is devoted to further training in technical subjects. It would be much more profitable, they felt, to use the equivalent of this year, for introducing more liberal arts subjects into the five-year engineering curriculum.

DISNEY'S NEW SCIENCE FILM

An artificial satellite floating a thousand miles above the earth, carrying instruments and apparatus to relay scientific information is featured in the new Walt Disney 16 mm. release *Man in Space*. Originally premiered on the television program "Disneyland," the film is now offered in Technicolor and in convenient 35 minute length. For its use in the educational markets a special 2 minute epilogue delivered by Walt Disney encourages youngsters of all ages to consider future careers in science and engineering. This film is the first in Disney's new, dramatic "Science-Factual" film series. It authoritatively traces rocket development from ancient Chinese weapons to modern missiles. It predicts the establishing of a man-made satellite and then provocatively depicts

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in detail how man will make his first flight to outer space. Prints (16 mm.) are available under a long term lease (with some limited rentals) through Walt Disney Productions, Educational Film Division, Burbank, California. Additional information including a colorful brochure is also available from the same address.

COMPARATIVE PERSONAL CONSUMPTION EXPENDITURES IN THE U.S. FOR THE YEARS 1955, 1956*

	1955	1956
Alcoholic Beverages	$10,090,000,000	$10,500,000,000
Gas and Oil	7,532,000,000	8,022,000,000
Tobacco	5,385,000,000	5,681,000,000
Shoes & Other Footwear	3,777,000,000	3,931,000,000
Religious & Welfare Activities	3,370,000,000	3,746,000,000
Electricity	3,228,000,000	3,536,000,000
Telephone & Telegraph	3,163,000,000	3,513,000,000
Physicians	3,070,000,000	3,269,000,000
Books, Magazines & Newspapers	2,319,000,000	2,416,000,000
Medical Care & Hospitalization Ins.	1,134,000,000	1,173,000,000

**Source:* Office of Business Economics of the U.S. Department of Commerce.

TEACHERS FROM FAR AWAY

One thousand teachers and school administrators from 64 countries will participate this school year in training programs arranged by the Division of International Education, Office of Education. About 450 of this number took part in orientation and program planning activities in Washington, D. C., from September 3 to 20. An exhibition of educational and cultural items from all parts of the world and a talent show of native music, songs, and dances were presented by the visiting educators. During their stay in the United States, they will study college and university courses, take part in special seminars, observe in our schools and engage in all aspects of American community life. An additional group of 150 exchange teachers from 11 countries attended orientation sessions in August arranged by the Educational Exchange and Training Branch. They then took up teaching positions all over the nation. Similarly, about 350 American teachers have been placed in 40 countries for the current academic year. These programs are conducted in cooperation with the International Educational Exchange Service and the International Cooperation Administration of the Department of State.—*Education Fact Sheet* of the U. S. Office of Education.

PICTORIAL RELIEF GLOBE

In the past, there were only two popular styles of school globes—political and physical-political (colored by elevation). The A. J. Nystrom and Company, 3333 Elston Avenue, Chicago 18, Illinois, has productd a new type. This new

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ABOVE AND BEYOND PAY

West Hartford, Connecticut, has a merit pay plan that works, says Superintendent Edmund Thorne. The plan includes (1) merit increments for teachers who have not reached maximum pay, and (2) "career" awards to teachers who have reached the maximum and who render outstanding service to the schools and community. The school system's salary schedule is not automatic although a teacher normally advances one step for each year of service. For superior work, he may be handed a double increment. The career teacher can rise as much as $1,500—in three $500 steps—above normal maximum. Basis for additional pay includes: teaching skills and pupil relationship, 65 per cent; staff relationships, 15 per cent; public relations, 10 per cent; and "the teacher as a person," 10 per cent.—*Education Fact Sheet* of the U. S. Office of Education.

NEW FABRIC FOR CHOIR ROBES

A new material, representing the first successful attempt to weave a fabric designed exclusively for the special needs of choirs and other choral groups, has been introduced by the E. R. Moore Company which also makes academic caps and gowns and gym suits.

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Colorfastness (it's woven from Chromspun yarn), one of the fabric's main features, was achieved through a unique solution dye process which builds color into the cellulosic acetate fibers. This protects the material from fading, lessens frequency for cleaning, and insures a constant freshness. Its soft glow is created by an organzine twist of threads. In addition, a Broadmoor robe can be stored almost anywhere, retaining its glow, free from mildew. Other

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